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# Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U. S. Patent Office.

Vol. 97 December 22, 1934 No. 25

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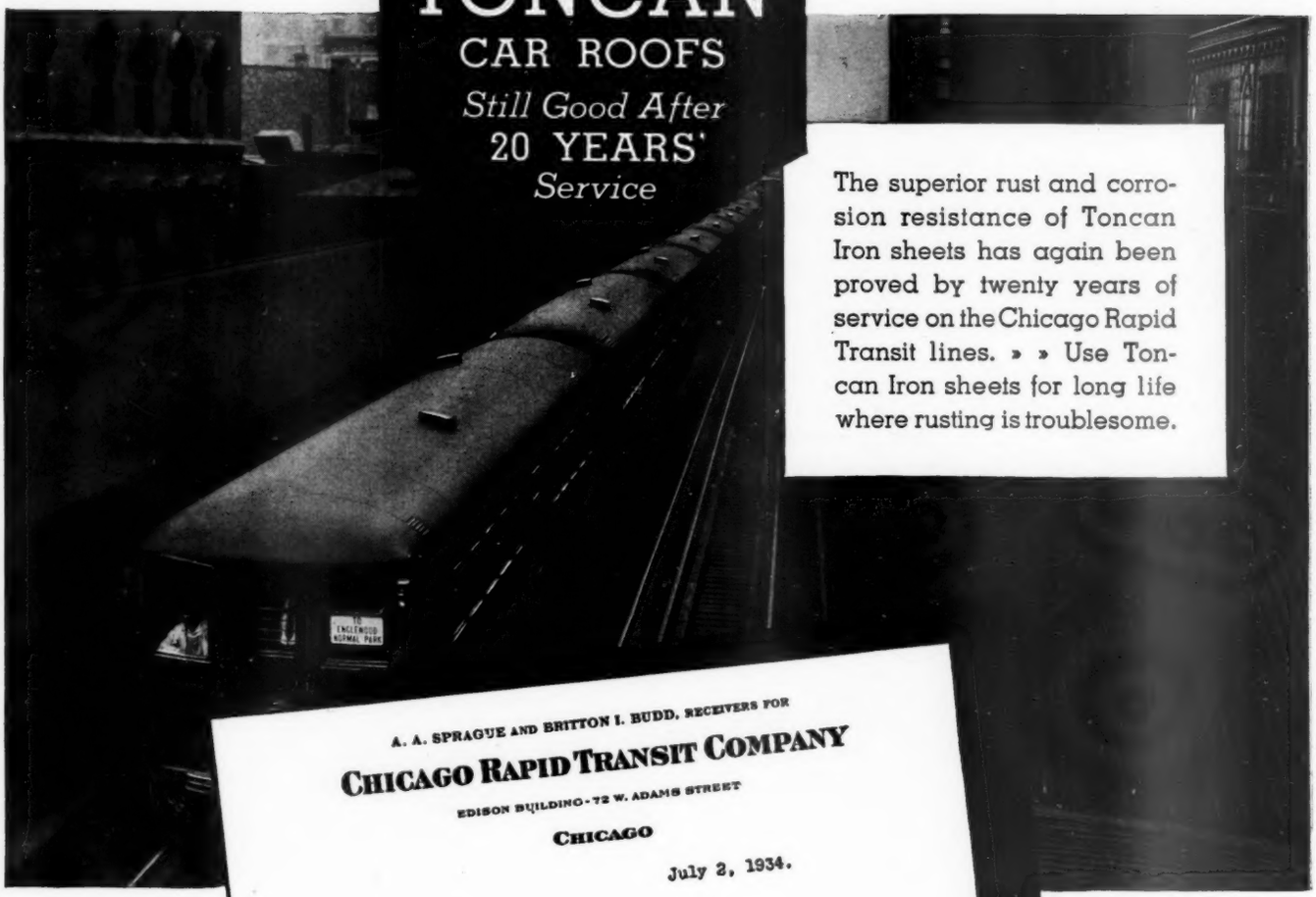

The superior rust and corrosion resistance of Toncan Iron sheets has again been proved by twenty years of service on the Chicago Rapid Transit lines. » » Use Toncan Iron sheets for long life where rusting is troublesome.

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**CHICAGO RAPID TRANSIT COMPANY**

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CHICAGO

July 2, 1934.

Mr. George Steck,
Special Representative,
Republic Steel Company,
332 S. Michigan Avenue,
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Dear Sir:-

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TONCAN IRON

# D. B. Robertson Takes Us to Task

President David B. Robertson of the Brotherhood of Locomotive Firemen and Enginemen in an article in the December issue of that organization's Magazine accuses us of "reckless and unfounded" statements in an editorial which we published in the *Railway Age* of October 13. In this editorial we commended the railway brotherhoods in western territory for their activity looking to repeal of the fourth section of the Interstate Commerce Act, calling attention, however, to the fact that President Robertson had frowned upon joint activity of the labor organizations to this end. We also said that President Robertson did not favor employees' working for such legislation unless the railways concede the six-hour day bill, train limit legislation and the like.

### Mr. Robertson's Own Words Show Where He Stands

Mr. Robertson suggests that we get our facts straight. We presume that he cannot object if we take them entirely from him. In the Brotherhood of Locomotive Firemen and Enginemen's Magazine for August was published a letter from Mr. Robertson to Harry See, chairman of the Western Conference Committee of the Standard Railroad Labor Organizations, in which he set forth his objections to the Conference Committee on the grounds that the brotherhood already has facilities for dealing with such matters (as fourth section repeal), and that he opposed the establishment of any "new tribunals" such as the Conference Committee. His letter to Mr. See then continued to say:

> It seems quite appropriate to here mention the fact that instead of getting the support from the railroads in behalf of our national legislative program in which the railway employees were interested, every possible effort was made by the railroads to defeat our legislative program. *Such opposition by the railroads to the legislative program of the employees is not conducive to much support on the part of the employees to any legislative program in which the railroads are interested.* Of course, the railroads, and possibly some employees might reply by saying that the employees also are interested in the repeal of Section 4, and doubtless certain statistics could be advanced to show what benefit will flow to employees as a result of repeal of this section. But, railway employees have lived under Section 4 for a number of years and they have also been obliged to accept every drastic economy measure that the railroads could impose as a means of reducing operating costs.
>
> Frankly, as stated during our discussion of this matter at Chicago on the evening on June 28th, I do not believe that railway employees should be called upon to furnish all of the co-operation in the handling of legislative or other problems affecting the industry in which management and employees are or should be interested. Every representative of the railway labor organizations who remained at Washington and assisted in promoting the legislative program of the railway employees must admit, if he is honest with himself and those he represents, that our program was opposed by the railroads and their influences to the very best of their ability. In the light of this experience and considering the limitations placed upon our Brotherhood in connection with the creation of or affiliation with agencies to handle work, for which adequate machinery is already available within the Brotherhood, I must advise that so far as the B. of L. F and E. is concerned it will not participate further in the so-called Western Conference Committee of the Standard Railroad Labor Organizations, or any other similar organization. This does not mean, however, that our organization is not willing to co-operate with the railroads and with other railway labor organizations through its duly elected officers and constituted committees, in the handling of any matters of mutual concern, but it does mean that *we do not believe we should be expected to furnish all of the co-operation.* (Italics supplied.)

If that statement does not indicate that Mr. Robertson believes that a connection exists between the "labor" legislation (such as the six-hour day bill, the full crew bill and other measures advocated by the railroad labor organizations) and legislation dealing with the railways' competitors; if it does not at least imply, particularly in the clauses we have italicized, that the unions should support transport competitive legislation only at the price of concessions by the railways to the labor union program—then our understanding of the English language is not as thorough as we think it is.

### Sees "Inconsistency and Humor" in Unions Working for Fourth Section Repeal

Mr. Robertson denies making "any statement indicating any terms upon which our Brotherhood would co-operate with the railroads in the fourth section matter." Literally, we suppose, this is correct. But the spirit he manifests toward transport competitive legislation is plainly just what we suggested. In other words, he clearly even now holds to the opinion that, somehow, the unions ought not be quite wholehearted about legislation dealing with railway competitors as long as the railways oppose their purely selfish union

legislative program. In the very article in which he so mercilessly flays us for giving "erroneous impressions," he goes on to say:

> The position of the railroads in connection with our legislative program was merely mentioned to Chairman See to indicate to him the inconsistency and humor of the situation wherein on one hand the carriers besought the co-operation of the employees to further legislation in their behalf, while on the other hand every influence at the command of the carriers was being exerted to defeat legislation sponsored by and in the interest of the employees.

Throughout Mr. Robertson's discussion the idea persists that fourth section repeal and other such measures are primarily "railroad" legislation and that "co-operation" of the labor organizations in securing their passage will be entirely one-sided unless railway managements are willing to make some concessions to the organizations in return for their support. That view, we maintain, is entirely unrealistic. Railway employees have an interest in fourth section modification and in the regulation of highway and water transport which parallels, but exists entirely independent of, the interest of railway owners and managements in such measures.

### Would Mr. Robertson Ask Payment for Putting Out Fire in His Own House?

To date the railway labor organizations have not, generally speaking, worked effectively in behalf of this transportation competitive legislation—vitally important as it is to their members. Apparently their reluctance has arisen from the belief that their support, if given, would benefit the railroads, and hence should only be given at a price—however badly the legislation might be desired by the union members in their own interest. This, we submit, is a narrow and unrealistic view. It is narrow in the same sense as would be the action of a man who would refuse to fight a fire in his own house unless his neighbor, whose house also was burning, would pay him to put forth the effort. It is unrealistic in assuming that railroad managements could possibly find relief from unfair competition so desirable that they could afford to pay a price for it in concessions of legislation to the unions which would bankrupt practically every road in the country.

This paper holds Mr. Robertson in high regard, despite the sharp things he says about us. We respect his intelligence, his ability and his integrity. We neither desire to put a misleading interpretation upon his remarks, nor do we think that we have done so. The inescapable fact remains that neither Mr. Robertson nor the other union leaders, speaking generally, have shown the same zeal for legislation which would reasonably restrict the railways' competitors as they have for legislation which would increase railway labor costs and thus magnify their competitive difficulties. This lack of interest by the organization leaders in behalf of legislation to equalize transportation competition has persisted in spite of the fact that such measures would demonstrably safeguard railway employment and labor standards far more effectively than any other proposed legislation could do so. Indeed, some protection of railway transportation from the encroachments of unregulated competitors, aided by subsidies and sub-standard wages, is absolutely essential to the maintenance of present labor standards on the railroads. But general pronouncements of policy do not alone constitute effective action. Such pronouncements, so far, are about the extent of union activity in behalf of transport equality—with the exception of the laudable educational efforts of some of the brotherhood magazines and the Western Conference Committee, which was denounced by Mr. Robertson.

## Significant Recent Railway Developments

In its issue of November 24 the *Railway Age* cited car loadings in the two weeks ended November 10 as evidence that improvement in business had begun again. Their subsequent trend has supported this view. Allowing for seasonal variations, they were relatively larger throughout November than in either September or October, and in the week ended December 8 were relatively larger than in any week since the second one in September. Apparently the downward trend that prevailed throughout the seven months April-October, inclusive, has been definitely reversed.

In no way could the effects of the various influences determining the trend of railway affairs be better illustrated than by citation of the results of railway operation in October, 1934, when loadings became relatively the smallest in any month since May, 1933. In 1934, as in almost every year, October has been the month of largest gross and net earnings, but the significant and striking facts are disclosed by the statistics for that month that both gross and net operating income were smaller in October, 1934, than in any previous October since the depression began. Since 1929 gross earnings in October have been as follows: In 1930, $483,500,000; 1931, $363,000,000; 1932, $298,500,000; 1933, $294,400,000; 1934, $293,000,000. Net operating income in October has been as follows: In 1930, $112,250,000; 1931, $64,000,000; 1932, $63,839,000; 1933, $57,265,000; 1934, $48,625,000.

The reasons why both railway gross earnings and net operating income became smaller in October, 1934, than in any previous October of the depression are worth reviewing. The decline of general business and traffic due to the depression reached bottom in August, 1932. Improvement then began, unaccompanied by corresponding increases in railway operating expenses, with the result that net operating income was almost as large in October, 1932, as in October, 1931. Government and business policies adopted in the summer of 1933 caused both gross and net operating income in October of that year to be less than in either 1931 or

1932. The same policies and the advances in railway wages that began on July 1, 1934, are mainly responsible for the still worse showing made in October, 1934. Running through all the depression years have also been the effects produced upon earnings by increasing outside competition and by reductions of rates made principally to meet it. Average revenue per ton per mile in 1934 has been about 7 per cent less than in 1930 and more than 8 per cent less than in 1929.

The improvement in traffic that has occurred since October is encouraging; but the cumulative effects produced by all the adverse influences to which the railways have been subjected—subsidized and unregulated competition, advances in prices of materials and fuel because of NRA, declines of rates, decline of traffic during most of the present year and advances in the wages of their employees—should be a warning that much must be promptly done to solve the railroad problem. Some businesses may be better than they were a year or two years ago, but the railroad business is not. In the three months August-October, inclusive, railway net operating income was $142,000,000 in 1932, $179,000,000 in 1933 and only $120,000,000 in 1934. In the first ten months of 1933 the railways earned $398,824,000 net operating income and in the first ten months of 1934 only $391,235,000, which was less than was earned in the first ten months of any depression year excepting 1932. They are confronted with the necessity of making on January 1 another 2½ per cent advance in the wages of their employees and on April 1 a 5 per cent advance, which will restore them to the pre-depression level.

Unless the improvement in traffic and earnings which began in November is rapidly accelerated by improvement in general business and by favorable transportation legislation it will be the unavoidable duty of railway managements to begin early in 1935 a movement to rescind the advances in wages now being made.

## The Difficulties of Government Ownership

The real evil in government ownership and operation of anything in this country arises from our national concept of government and its functions—concept, that is, not of theory but of practice.

If the railroad plant of this country were a *finished* plant in which there was no more than ordinary obsolescence and no physical depreciation resulting from deferred maintenance—if, in short, it needed little more capital—there would be little danger of government ownership and operation. Railroad security holders could write down their investments and take their losses, and nobody would waste much sympathy upon them. Nor would there be any very strong demand from any class—railroad, labor or shippers—other than social theorists, for governmental handling in principle.

The danger lies in the fact that the railroad plant is not finished, that there is in it quite an appreciable amount of physical depreciation and that accrued obsolescence is large—especially in rolling stock. It needs a large amount of new capital. It has not—save in the case of a small group of companies—the credit necessary to raise this capital and the Government is the only possible source. Already the camel's head and shoulders are in the tent and another year or two—failing a large revival in volume of traffic—should see that ruminant completely at home and under canvas.

What is the real evil to be dreaded in government ownership and operation of our railroads? We all know the answer—politics. But we do not always stop to analyze the content of that word in this particular connection. We are constantly hearing from our demagogues that "big business" has corrupted politics. The truth is deeper than that. The real "corruption" comes from "Main Street," which has by its votes convinced the average politician that the way to hold his job is to show his particular Main Street that he has got something for it from the public purse. All the lobbying by this, that or the other "vested interest" fades into insignificance beside such exhibits as the old "pork bill", the waterways, the post offices and the jobs, every one of which is designed to appease Main Street's appetite for the flesh pots. These things are the very warp and woof of our everyday "politics" as we practice it—and we all know it.

Now conceive Main Street politics in the management of our railroad applied to questions of abandonment, new construction, improvements, rates, service, equipment standards and the rest! How could we minimize the evils of such a development unless we minimize Main Street itself? And how are we to do that when the outstanding phenomenon of the times is that Main Street is everywhere in control of both power and flesh pots. (The reader will have the goodness to note that this writer does not in the least object to Main Street using a somewhat larger spoon on the flesh pots. What he fears is that its cooking will result in both a smaller content in those receptacles and a less flavorful stew.) To minimize the evils of such a control we should have to remove altogether from politics such things as—

1—Abandonment and new construction,
2—Additions and betterments,
3—Rates, and
4—Wages,

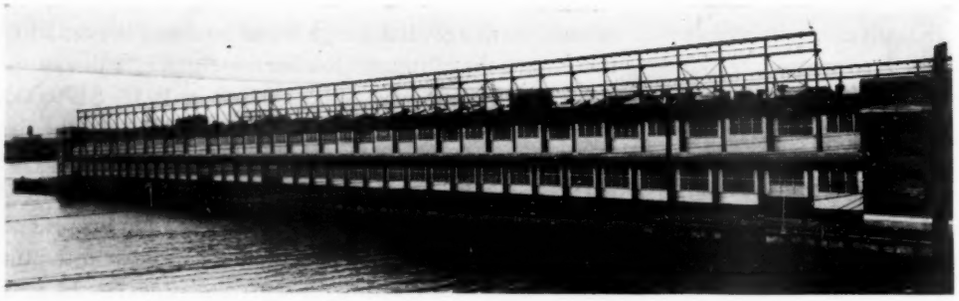
and place the power to determine all such things in some body as little subject to political interference as is our Supreme Court today. And to make sure of the necessary degree of political isolation it would, perhaps, be necessary to disfranchise all employees of the Government's railroad system.

Can anyone suppose that Main Street would ever consent to any such arrangement? Of course not.

Of all countries on the face of the globe, ours is least qualified to conduct a system of government railroads with any approach to reasonable efficiency, measured by standards of private operation, and the reason is simply the Main Street theory of government, as the determinant of our politics. In addition to that is the fact that our bureaucracy rather frequently lacks—at the top—the tradition of single-minded devotion to the duty imposed upon it by the laws under which it works. There are always exceptions, of course, but speaking metaphorically the malign shadow of Capitol Hill constantly rests upon the departments, and ordinary acute olfactory nerves can generally detect in Washington's circumambient air a certain faint fetor or miasma which becomes the more sensible the longer one lives in the Capital city.

This writer, therefore, is not sanguine of success in any preliminary attempt to minimize the evils of government ownership and operation of railroads so long as Main Street remains the Main Street of today.

*Thomas F. Woodlock in the Wall Street Journal*



Broadside View of the Pier, Showing the Large Number of Wide Cargo Doors Which Line Both Sides at Both Floor Levels

# Pennsylvania Builds Large M Pier at Baltimore

THE Pennsylvania has completed at Baltimore, Md., a modern two-story, all-steel and concrete marine pier 930 ft. long by 223 ft. wide, which incorporates a number of unusual and interesting features, and which is said to be the second largest pier of its kind in the country. Incidentally, the pier, which cost approximately $2,000,000, is supported entirely on precast reinforced concrete piles, contains no combustible materials in any part of its structure, and is served by three distinct fire-fighting systems to protect it and its contents from fires either within or without.

The new pier, which is located in the Canton district of Baltimore, facing on Clinton street, replaces three old timber piers in about the same location, which were destroyed by fire in 1932. Designated as Pennsylvania Pier No. 1, the new pier will be used, as were the old ones, for the import and export of all kinds of nonperishable goods. It provides wharf space for four ocean-going vessels at one time, in addition to servicing space for smaller harbor craft; affords channel slips with a navigable depth of 35 ft. at mean low water; is served by 4,440 ft. of tracks within and on its side aprons; and has a freight-handling capacity of approximately 3,000 tons a day.

### Details of Concrete Pile Foundation

While the overall length of the pier is 930 ft. and its width 223 ft., the pier superstructure, which includes a three-floor office section at the bulkhead end with a two-story freight shed beyond, covers an area 895 ft. long by 173 ft. wide. This is so located as to provide an apron 32 ft. wide along the south side, a similar apron 18 ft. wide along the north side, and still another apron, 25 ft. wide, on the out-shore end.

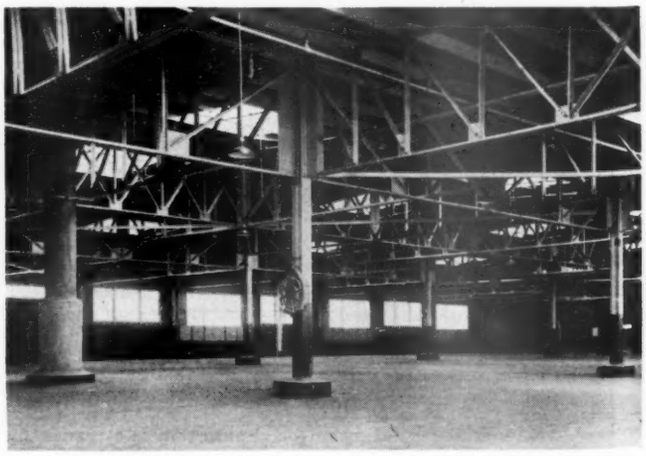
One of the interesting features of the pier from a construction standpoint, and no less from the standpoint of lessened fire hazard, is the fact that it is supported throughout on Raymond reinforced concrete piles, there being a total of 4,501 piles in the substructure, ranging in length from 38 ft. to 90 ft. All of the piles were made in a specially arranged casting yard directly inland from the pier, and were placed on scows by a traveling crane erected over the yard.

In the general arrangement of the pile foundation, which penetrated gravel and compact clay below about 20 ft. of mud, pile clusters were provided beneath the column footings, elevator shafts, etc., while single piles, on approximately 10 ft. centers, were driven to support the lower floor slab. In addition, a number of batter piles were driven along each side of the pier to absorb any lateral shock or impact occasioned by boats tying up, and also at the bumping-post end of all of the service tracks. The bulk of the piles employed were 18 in. square in section, although all of the batter piles were 18 in. by 20 in.

All of the pile clusters are capped with concrete slabs to act as column footings, those along the sides of the pier being generally 5 ft. 4 in. by 8 ft. 4 in., and 41 in. deep, while those carrying the interior columns are generally 12 ft. square and 39 in. deep. The single intermediate piles are each capped by floor drops 2½ ft. square by 1 ft. deep, which, in turn, directly support the 8-in. floor slab. To give increased stiffness to the pile substructure, all of the column footings are tied together, both lengthwise and crosswise of the pier, by reinforced concrete stiffener struts, generally 28 in. wide by 27 in. deep. Similarly, stiffener struts, crosswise of the pier, tie together the piles beneath both the side and end aprons of the pier.

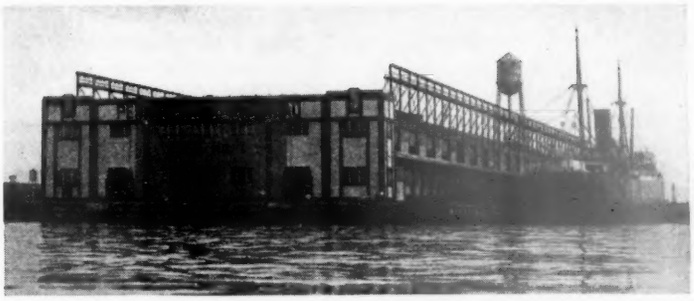
### Superstructure is Fireproof Throughout

The superstructure of the pier is of steel frame construction, with Carnegie H-sections employed for both interior and side wall columns. Both sides of the first floor area are entirely enclosed with Truscon vertical-lift, double-leaf steel doors, while the second floor area has



One of the Four Spacious Sections of the Second Floor Level Between Fire Walls, Showing One of the Locomotive Smoke Exhaust Ducts

**Double-deck, fireproof structure, which will accommodate four ships at a time, has concrete pile foundation and an unusually complete fire protection system**



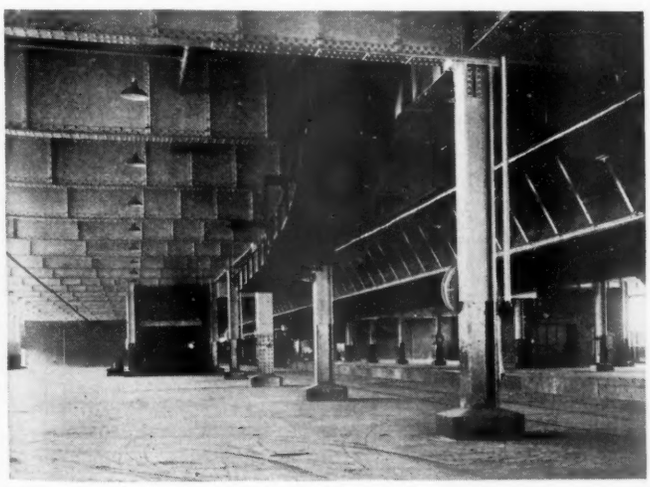
The New Pier at Baltimore, Md., Will Dock Four Ocean-Going Ships at One Time

# Modern Marine

similar doors in alternate panels along both sides, with the intermediate spaces closed in with Byer's corrugated wrought iron siding, which is fitted with sectional steel sash. Altogether, there are 118 doors in the sides of the pier, all of which have sectional steel window sash in their upper halves, glazed with wire glass, and all of which are chain-hoist-operated from the floor level. The out-shore end of the pier is completely enclosed with corrugated wrought iron sheets, with rolled steel sash at both floor levels for the admission of light. In addition to the sash, there are two large freight door openings at the first floor level, which are provided with sectional vertical-lift steel doors.

Both floors of the pier are of concrete. The first floor, which is essentially two wide platforms separated by a track pit centrally through the pier, is designed as a flat slab with two-way reinforcing and direct support on the concrete pile foundation, while the second floor, with one-way reinforcing, is supported on a steel I-beam and girder system. The first floor, which is eight inches thick, is designed to carry a uniform live load of 800 lb. per sq. ft., or the equivalent of two 20-ton trucks, with no impact, while the second floor is designed with a carrying capacity of 350 lb. per sq. ft., equivalent to a single 20-ton truck.

Only two longitudinal rows of interior columns support the second floor and the roof, these being located about 55 ft. in from the side walls on each side, and affording a space of 62 ft. between them. Lengthwise of the pier, the interior columns are spaced 40 ft. center to center. While this arrangement of columns required a floor system heavier than usual to carry the second floor, it afforded floor areas with a minimum of obstructions to freight-handling operations. The column spacing along the side walls, which was determined primarily by the size of door openings desired, is generally 20 ft. center to center.



General View of the First Floor Platforms—Note the Smoke Collecting Hood Over the Track Pit, and the Package Chute from the Second Floor

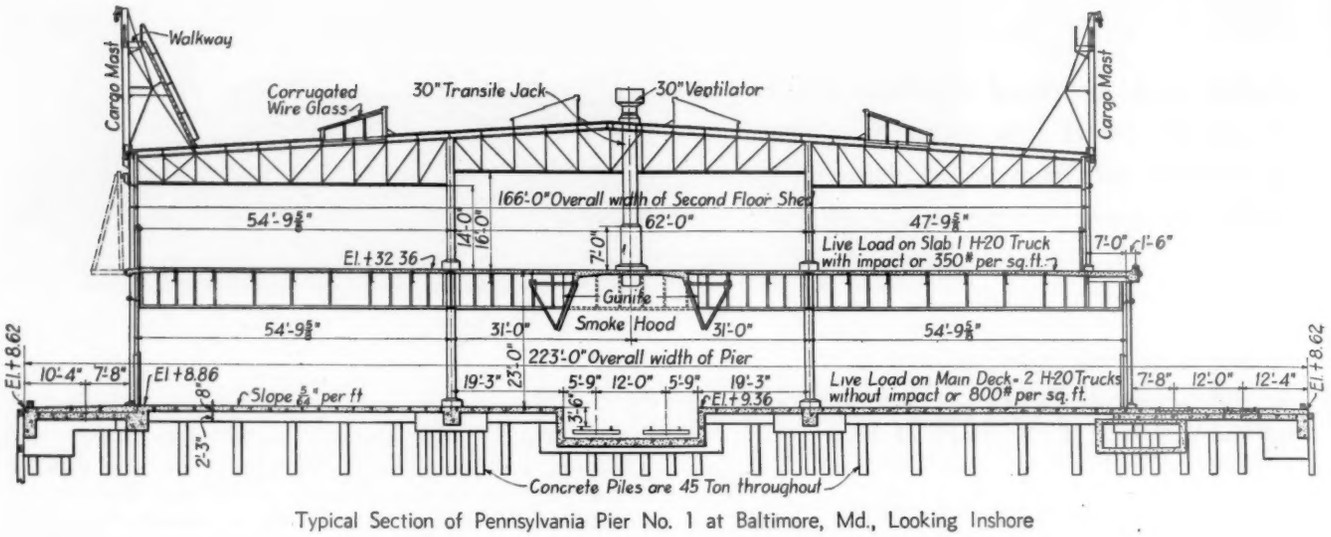
The roof of the pier is of the simple shed type, pitched ¾ in. in a foot each way from a center ridge. It is supported on relatively light structural steel trusses spanning the center and side bays, and consists of a rib-type steel deck, welded to light channel purlins, and insulated on top by a ½-in. layer of fireproof insulation, applied in sheet form. The waterproof cover over the roof consists of four plies of felt and pitch, coated with slag.

To afford an abundance of daylighting throughout the second floor, the lighting from the sides is supplemented by that from four lines of skylights in the roof, one immediately on each side of the ridge, over the center bay, and the others over the two side bays. All of the skylights are of the puttlyless type and are glazed with corrugated wire glass.

Other openings in the roof are provided along the ridge line for ventilators, there being a total of 21 of these, all constructed of Robertson asbestos-protected metal, and 24-inch. in diameter. A feature of these ventilators, which are of the stationary type, is that they are equipped with fused, counterbalanced dampers. Any fire within the pier that is of sufficient intensity to melt the fusible link on the damper, will cause the damper to close automatically, thereby minimizing draft.

All of the steelwork within the pier shed is painted with aluminum paint, in part to improve illumination, and, likewise, all of the pier doors and wrought iron siding, both inside and outside, have been painted with the same kind of paint. The structural steelwork exposed on the outside of the pier is painted dark green, largely to give the appearance of trim.

One of the features of the pier is the track facilities provided to facilitate the transfer of freight between cars and vessels. These include five tracks, two extending practically the full length of the apron along the south side, one, a similar distance along the apron on the north side, and two other tracks extending longitudinally through the center of the pier. The tracks on the pier aprons, which will permit the direct transfer of freight between vessels and cars, are laid with 159-lb. girder rail embedded in the apron deck, and have direct service connection at the in-shore end with a new pier yard provided directly in-shore from the pier. In addition, the flexibility of switching between the two tracks on the south-side apron is increased by the provision of a No. 8




Typical Section of Pennsylvania Pier No. 1 at Baltimore, Md., Looking Inshore

double crossover between these tracks, about midway the length of the pier.

The tracks within the pier, both of which are 874 ft. long, are depressed below the floor surface to permit level trucking into and out of cars. These tracks, unlike the apron tracks, are laid with 130-lb. tee rails on timber ties and stone ballast.

In order to permit steam locomotives to enter the pier shed for switching operations, which is essential from an operating standpoint in view of the length of the pier, a smoke-collecting system has been provided over the inside tracks, which insures the complete and prompt removal of all smoke and gases, without permitting them to enter the freight-handling areas. This system includes a hood longitudinally over the tracks for the first 440 ft. of their length, with 30-in. smoke ducts at 35 to 120-ft. intervals, extending up through the second floor area to the roof. The closest spacing of the smoke ducts is near the in-shore end of the pier, where most of the locomotive movements will be made, the spacing increasing to a maximum at the outer end of the hood, where, under normal conditions, the necessity for locomotive operation will be considerably less.

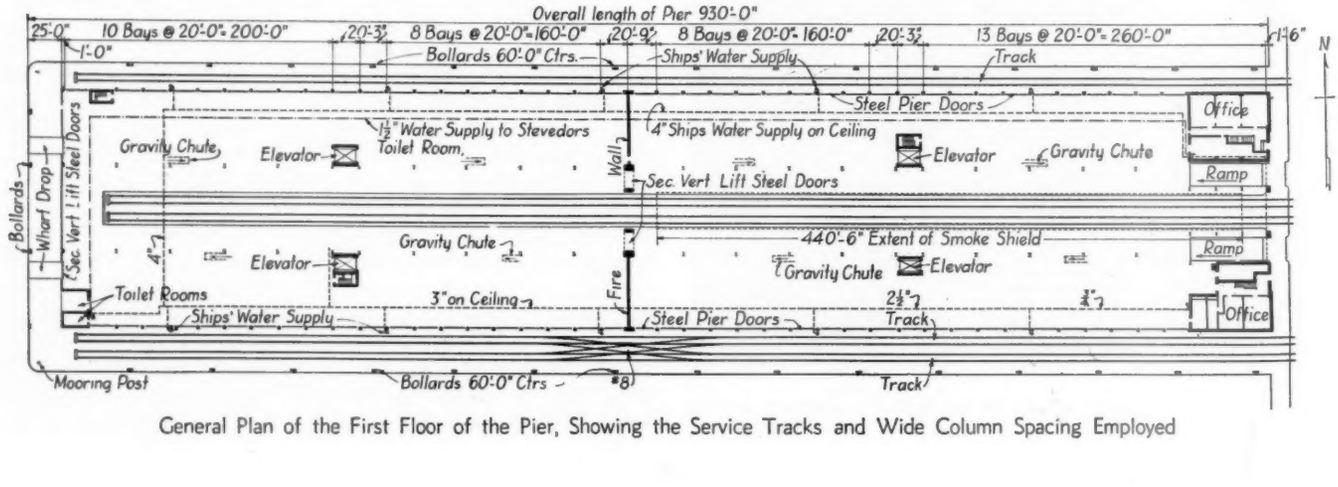
The smoke hood consists essentially of inward-sloping sides about 9½ ft. deep, made from corrugated Transite sheets, which, held in place by steel supports on their outer side, direct the gases upward against the underside of the second floor slab. Within the limits of the hood, the under side of the floor slab has a concave contour, which was provided when the slab was poured to facilitate the complete elimination of all smoke and gases. Furthermore, within the limits of the hood, the structural steel supporting the second floor is encased in gunite concrete.

The smoke ducts leading from the hood are supported directly on the second floor slab and, to a height of 7 ft. above the floor, are essentially sections of 30-in. reinforced concrete pipe, with 6-in. walls. Above this level, the ducts are constructed of Transite pipe of the same inside diameter, leading to 30-in., Robertson damperless ventilators above the roof. The purpose of the heavy concrete base section of the ducts is, of course, to minimize the possibility of damage by freight-handling operations on the second floor. In fact, as further insurance against damage to the ducts, each has been provided with a low, steel-faced concrete curb about the base.

### Pier is Well Equipped and Lighted

To facilitate the varied operations carried out at the pier, adequate freight handling and transfer equipment has been provided and a number of special conveniences have been installed. The principal equipment for transferring freight between the first and second floors includes four, five-ton electric elevators, with 10 ft. by 16-ft. platforms. There are also eight gravity parcel chutes, which will be used to lower incoming package freight from the second to the first floor. These facilities are so located as to require minimum trucking in all parts of the pier. A special feature of the parcel chutes is that they are sectional, with hinged joints, and are provided with chain hoists, whereby they can readily be raised clear of the first floor when not in use.

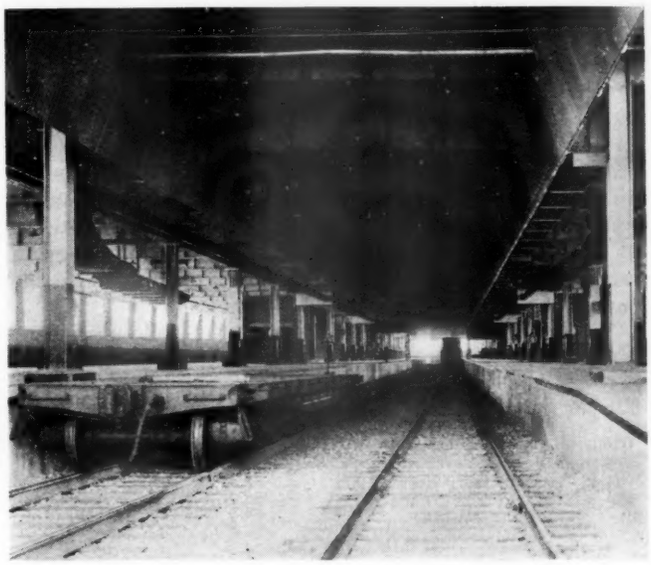
Other freight-handling facilities on the pier include cargo masts along both sides of the roof; a seven-foot




General Plan of the First Floor of the Pier, Showing the Service Tracks and Wide Column Spacing Employed

loading and unloading platform or apron along the full length of the pier at the second-floor level on the south side; four movable loading and unloading platforms at the second floor level on the north side; and two wharf drops at the out-shore end of the pier for convenience in trucking to and from lighters. In addition to these, provision has been made for a gantry crane for operation over the south-side apron of the pier, and for a future vehicle ramp to the second floor if that should become desirable.

Special facilities to assist operations at the pier include twenty-eight 500-watt floodlights along the cargo masts, which illuminate ships tied up alongside; extension light plugs at intervals of about 40 ft. along both sides of the pier; and ship-to-shore telephone connections, six on each side, to give ships direct phone connection with the city. Night illumination within the pier is by 200-watt electric ceiling lights in shallow bowl, porcelain-lined reflectors, in a system which is so sectionalized as to permit maximum lighting where required without wasting light elsewhere.



Looking Through the Two-Track Pit Which Serves the First Floor Throughout Its Length

The office facilities at the pier are located at the in-shore end, facing on Clinton street, and include three floors extending the full width of the pier and 62½ ft. deep. This section, which is enclosed with brick and fitted throughout in keeping with its purpose, affords space for railway and steamship company offices, a small passenger waiting room, and for such other purposes as record storage, toilets, etc. Special areas on the first floor have been set aside to house a small heating plant, which supplies low pressure steam to the office areas, and for a pump employed in the fire protection system.

### Thorough Fire Protection is Afforded

One of the outstanding features of the pier is the fire protection system. In fact, there are three distinct fire protection systems on the pier, including a dry-pipe automatic sprinkler system, reaching all sections of the freight and office floors; an open, or water-curtain system, employed over certain areas to meet special conditions, and a standpipe and hose system. Of these, the sprinkler and open systems are each sectionalized into 12 individual systems, and the sprinkler and standpipe and hose systems are automatic in operation, while the open system is manually controlled. In addition to the water systems, the first floor of the pier is divided longitudinally into two sections, and the second floor into four sections, by hollow tile fire walls, 12 in. thick, with self-closing fire doors at all openings, Kinnear sliding-type doors being used at the smaller openings, and Burvett sectional, vertical-lift steel doors at the larger openings. Furthermore, all openings in the upper floor, such as those serving the package chutes, are housed in with brick enclosures, with automatic fire-doors over the entrances.

The open, or water-curtain, fire protection system is employed essentially over all door openings on both floors, along the sides and out-shore end of the pier, to prevent the spread of fires from ships or other outside sources into the pier. It is also employed over the double-track opening in the fire wall on the main floor. In this system, which employs a series of specially-shaped nozzles directed against an adjacent vertical surface to give uniform diffusion of the water, a solid curtain or sheet of water is spread over the opening protected. In the standpipe system, there are 32 hose connections on the two floors and, in addition, 10 monitor-type nozzles on the roof to attack pier or ship fires from above.

All of the fire water systems are fed by two 8-in. mains in a loop system, which, in turn, is supplied from a 100,000-gal. steel tower-type tank directly over the office section, the bottom of which is about 140 ft. above the first floor level. A 1500-gal. per min. electrically-operated fire pump is also provided to step up the water pressure when required.

In addition to the automatic operation of practically all of the fire protection equipment, 24-hour watchman patrol service is in effect at the pier, and all of the fire water systems, except the water-curtain system, are connected electrically into the American District Telegraph Fire Alarm system.

Altogether, approximately 37,000 cu. yd. of concrete was used in the pier construction, about half of which was employed in the piling. Three thousand-pound concrete was used in the deck and 3,500-lb. concrete in the piles. All of the concrete was delivered to the job, ready mixed, by the Arundel-Brooks Corporation, Baltimore, and, incidentally, tested well above the design requirements. The structural steel in the pier, which amounted to approximately 4,150 tons, was furnished by the McClintic-Marshall Company.

The design and construction of the pier was carried out under the direction of T. J. Skillman, chief engineer of the Pennsylvania, A. R. Wilson, engineer of bridges and buildings, and W. B. Wood, engineer, Baltimore improvements, with R. Perkins, engineer in charge in the field. The general contractor on the work was Sinclair & Grigg, Philadelphia, Pa.

# Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended December 8 totalled 551,011 cars, an increase of 62,893 cars as compared with the week before, which included the Thanksgiving day holiday. This was also an increase of 9,019 cars as compared with the corresponding week of last year and of 30,404 cars as compared with the corresponding week of 1932. All commodity classifications showed increases as compared with the holiday week, but merchandise, grain and grain products, forest products and coke showed decreases as

compared with last year. The summary, as compiled by the Car Service Division of the Association of American Railroads, follows:

### Revenue Freight Car Loadings

Week Ended Saturday, December 8, 1934

| Districts | 1934 | 1933 | 1932 |
|---|---|---|---|
| Eastern | 120,587 | 122,070 | 116,961 |
| Allegheny | 100,421 | 104,092 | 95,852 |
| Pocahontas | 35,726 | 33,396 | 36,586 |
| Southern | 86,395 | 80,317 | 82,988 |
| Northwestern | 67,858 | 63,413 | 58,695 |
| Central Western | 89,554 | 91,083 | 80,110 |
| Southwestern | 50,470 | 47,621 | 49,415 |
| Total Western Districts | 207,882 | 202,117 | 188,220 |
| Total All Roads | 551,011 | 541,992 | 520,607 |
| Commodities | | | |
| Grain and Grain Products | 28,520 | 28,639 | 27,755 |
| Live Stock | 20,195 | 16,895 | 18,100 |
| Coal | 118,088 | 108,206 | 119,385 |
| Coke | 5,388 | 6,296 | 4,979 |
| Forest Products | 20,524 | 20,631 | 15,354 |
| Ore | 3,597 | 2,574 | 1,840 |
| Merchandise L.C.L. | 157,078 | 162,541 | 165,760 |
| Miscellaneous | 197,621 | 196,210 | 167,434 |
| December 8 | 551,011 | 541,992 | 520,607 |
| December 1 | 488,118 | 499,596 | 547,095 |
| November 24 | 561,313 | 585,738 | 493,318 |
| November 17 | 584,525 | 602,708 | 572,623 |
| November 10 | 594,932 | 583,073 | 536,687 |
| Cumulative Total, 49 Weeks | 29,232,644 | 27,674,404 | 26,764,372 |

### Car Loading in Canada

Car loadings in Canada for the week ended December 8 totaled 43,418 cars, as against 39,601 in 1933 and 45,515 cars for the previous week, according to the compilation of the Dominion Bureau of Statistics.

| | Total Cars Loaded | Total Cars Rec'd from Connections |
|---|---|---|
| Total for Canada: | | |
| December 8, 1934 | 43,418 | 19,096 |
| December 1, 1934 | 45,515 | 17,575 |
| November 24, 1934 | 47,748 | 20,054 |
| December 9, 1933 | 39,601 | 18,445 |
| Cumulative Totals for Canada: | | |
| December 8, 1934 | 2,206,121 | 1,041,404 |
| December 9, 1933 | 1,928,099 | 903,533 |
| December 10, 1932 | 2,082,297 | 923,654 |

# Car Pooling Section Reports on Box Car Movement

WASHINGTON, D. C.

CO-ORDINATOR EASTMAN on December 17 sent to all Class I railroads a report by his Section of Car Pooling analyzing the interchange movements during 1934 of 1,000 selected box cars for the purpose of ascertaining what is being done with cars which move away from the owning road under load. In view of the attention now being given to car handling, and particularly to avoidable empty movement, Mr. Eastman says, this report should be of interest, and he adds that if the results are not entirely representative, they are at least indicative of the effect of present car service and per diem rules upon the movement of box cars. The Car Pooling Section has proposed to the roads a plan for car pooling to reduce the amount of empty movement.

Twelve railroads were requested to furnish reports on a given number of their cars, selected at random from designated groups, the grouping being made with respect to the age of cars. The reports show one complete round trip movement of each car. The commodity with which the car left the home line was reported and the interchange movements, either loaded or empty, were recorded, together with the number of days the car was on each foreign road.

"Several striking results were obtained from the summarization of these reports," O. C. Castle, director of the Section of Car Pooling, said in his memorandum to Mr. Eastman:

*First.* The cars, without respect to their age, the commodity with which they were loaded when leaving the home road, or the prevailing direction of the loaded interchange traffic, were returned to the owner empty in 89.1 movements of each 100.

*Second.* The length of time the cars were away from home was directly related to the age of the various groups. For example, the cars designated as Group 4, ranging from 16 to 20 years of age, averaged a round trip of 11.69 days. Group 1, with an age range up to 5 years, averaged 14.55 days, or 24.4 per cent longer than the oldest group.

This illustrates concretely that as the general condition of cars is lowered, the tendency is to switch out foreign cars and preferentially use the higher grade and newer equipment. In periods of heavy demand this tendency is more marked.

*Third.* Age also had a bearing upon the number of interchange movements made while the cars were away from home. The interchange movements for the youngest cars averaged 5.55, while cars in the older group came home with only 4.50, which means that they touched one less road in their journey.

"These results are illustrated in the following summaries:

Percentage of Box Cars Delivered by Owner Loaded in Road Movement and Returned Empty

| Group Number | Age (Years) | % Returned Empty | Index |
|---|---|---|---|
| 4 | 16-20 | 88.4 | 100.0 |
| 3 | 11-15 | 88.0 | 99.5 |
| 2 | 6-10 | 89.6 | 101.3 |
| 1 | 0-5 | 90.4 | 102.2 |
| | Weighted Total | 89.1 | 100.6 |

Average Days Per Diem Earned Per Round Trip Away From Home

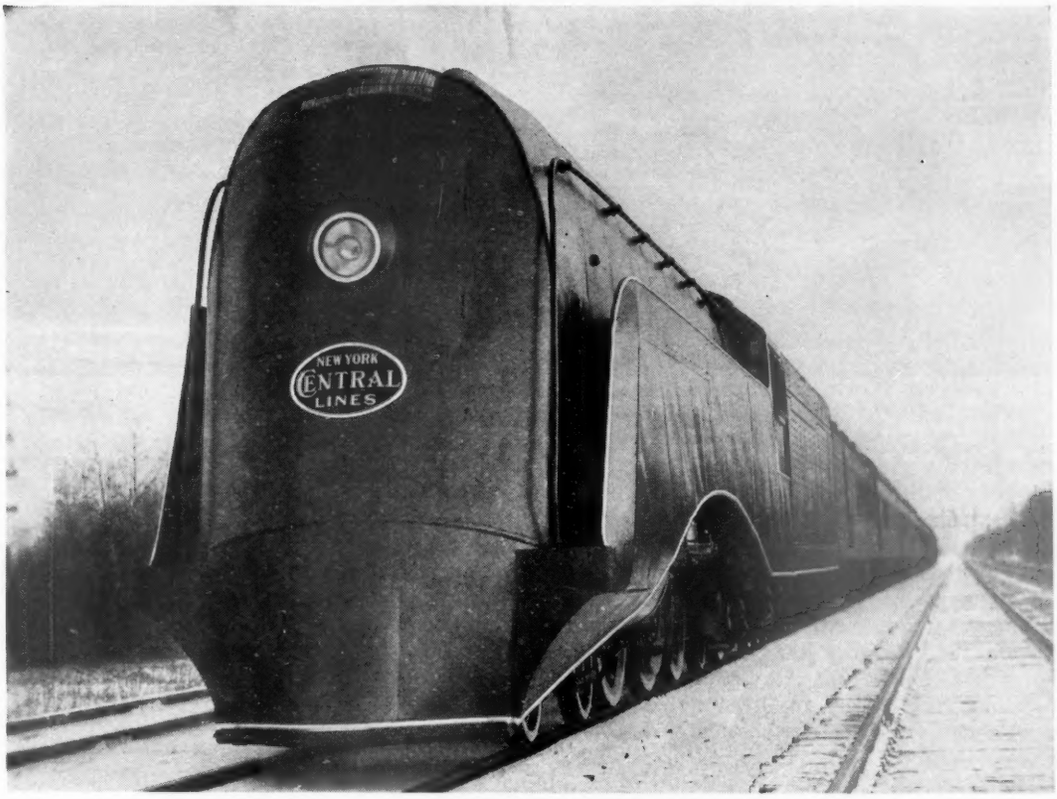
| Group Number | Age (Years) | Avg. Days Per Round Trip. | Index |
|---|---|---|---|
| 4 | 16-20 | 11.69 | 100.0 |
| 3 | 11-15 | 13.44 | 115.0 |
| 2 | 6-10 | 14.08 | 120.4 |
| 1 | 0-5 | 14.55 | 124.4 |
| | Weighted Total | 13.44 | 114.9 |

Average Number of Interchanges Per Round Trip

| Group Number | Age (Years) | Number of Interchanges | Index |
|---|---|---|---|
| 4 | 16-20 | 4.50 | 100.0 |
| 3 | 11-15 | 5.34 | 118.5 |
| 2 | 6-10 | 5.28 | 117.1 |
| 1 | 0-5 | 5.55 | 123.2 |
| | Weighted Total | 5.17 | 114.7 |

"There were 174 commodities loaded into the 1,000 cars. Classification of cars suitable for certain commodities varies, but for the purpose of this study we have considered 75 commodities listed in Exhibit B as requiring a high grade car. Of the total cars loaded, 562, or 56.2 per cent, fell under our grouping as high grade, and 43.8 per cent as all others." The following table shows the use of the various age groups for the two classes of commodities:

| Group Number | Age | Number of Cars | Per Cent of Cars Loaded: High Grade Commodities | Per Cent of Cars Loaded: All Other Commodities |
|---|---|---|---|---|
| 1 | 0-5 | 250 | 68.0 | 32.0 |
| 2 | 6-10 | 250 | 63.2 | 36.8 |
| 3 | 11-15 | 250 | 50.4 | 49.6 |
| 4 | 16-20 | 250 | 43.2 | 56.8 |




The "Commodore Vanderbilt," Streamlined Passenger Locomotive Photographed on Its Trial Run on December 14

# New York Central "Streamlines" Passenger Locomotive

## 4-6-4 type fitted with cowling to determine effect of reduced head-end air resistance on effective drawbar pull at high speeds

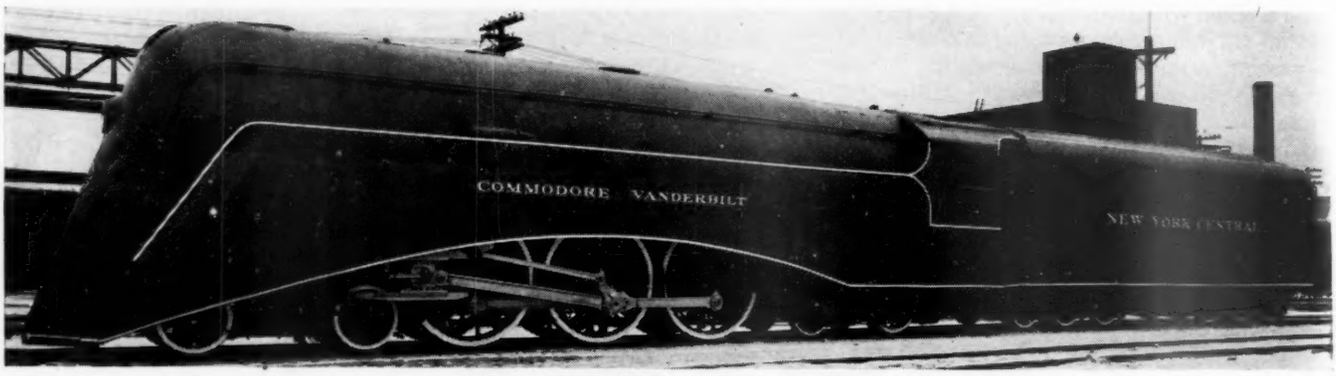
ON December 14 the "Commodore Vanderbilt," the first steam locomotive in America to be extensively streamlined, made its trial run on the New York Central at West Albany, N. Y. The locomotive is one of the 4-6-4 type passenger locomotives which has been in regular service on the railroad for several years. In its new form it will be used to determine in road tests, the effect of reduced head-end air resistance on effective locomotive capacity at high speeds.

The form of the cowling applied to this locomotive was developed after a series of model tests had been made in the wind tunnel of the Case School of Applied Science, Cleveland, Ohio. These tests indicate that, with the streamlining and partial shrouding applied on the Commodore Vanderbilt, a reduction in head-end air resistance of 30 per cent may be expected and that for oblique winds the reduction would be somewhat less. The prevailing winds along the line of New York Central are from the west. On westward movements with running speeds of between 60 and 80 m.p.h. the prevailing head-end air velocity may range from 70 to 110 m.p.h. On the basis of test indications it is expected that the streamlining and partial shrouding of the locomotive may increase the effective drawbar pull by 2½ per cent to 12 per cent within this speed range.

The cowling over the boiler and front end of the locomotive is supported on a frame of light structural members attached to the boiler. Between the cowling and the jacket, which has been retained to protect the lagging from possible damage from condensation, are the throttle reach rod, the blower-valve extension handles and auxiliary piping. Recesses in the top of the cowling are for the bell, whistle, safety valves and low-water alarm.

A hinged door has been placed in the front-end cowling which provides access to the front-end inspection door. When closed this door fits around the headlight which is supported on the front end. The location of the two cross-compound air compressors behind the pilot beam under the smoke arch has been retained, but the heavy cast-steel shields which were formerly placed in front of the pumps have been removed. The headlight and train-control turbo-generator set has been mounted over the center of the pilot beam. The New York Central Lines' emblem plate is secured to the cowling by bayonet latches and its removal permits inspection of the turbo-generator set. A removable panel in front of the pilot provides access to the coupler, which is normally dropped in its pocket in the cast-steel pilot. A small covered opening is also provided in front of the brake-pipe angle-cock, through which a brake hose may be inserted.

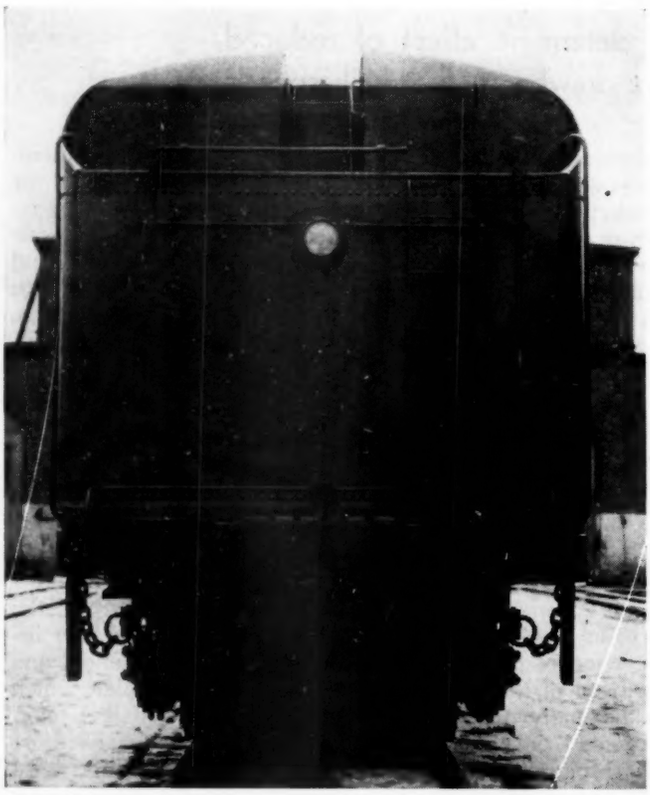
A recess in the top of the cowling over the smokebox




Unbroken Surfaces and Smooth Contours Are Designed to Reduce Head-End Air Resistance

provides for the flow of air past and behind the stack. The rear of this recess, which opens at the front through a light grille panel, has been shaped to provide an upward lift to the air stream which serves to lift the smoke and exhaust steam from the stack well above the top of the locomotive. Just in front of the main stack is an auxiliary stack to which are led the exhausts from the booster, the feedwater pump, the turbo-generator set and the stoker. This and the main stack are enclosed in a so-called "tear-drop" or streamlined shroud to reduce turbulence in the air stream which performs the smoke-lifting function.

The sides of the locomotive below the running board have been shrouded to the fullest extent practicable without sacrificing access to the running gear for lubrication while in service. This shrouding is applied in panels hinged at the running board which can be lifted outward for unobstructed access to the valve motion and running gear in the enginehouse. When closed these panels are supported at the bottom by light brackets attached to the boiler or locomotive frame. The steps leading to the front ends of the running boards on either side of the locomotive are shrouded at the sides and rear. An unobstructed passage between the back of the steps and the shrouding directs a high-velocity air current upward and backward along each side of the boiler which tends to prevent lateral trailing of smoke and steam from the stack when the locomotive is running.



The Rear of the Tender, Showing Recess in the Cowling for Access to the Cistern Hatch

The coal space in the tender is completely enclosed by hatch doors which carry the cab contour back to the rear of the tender. These doors, which open in pairs in several transverse panels, are hinged at the sides and provide an opening approximately two-thirds the width of the coal space when fully open. They are carried on angle cross frames and close against a heavy T-section longitudinal member which is located over the center line of the coal space. Each door consists of two hinged panels and is opened by lifting or pushing up the hinge joint between the panels. An ingenious latching device, attached to one door of each pair, permits locking the two doors together when they are closed. These latches can be operated and the doors opened either from the coal pit or from the top of the tender.

The contour of the cab roof is carried back of the coal space to the rear of the tender by cowling. A center recess is provided in the rear of the cowling, however, to permit access to the cistern hatch without climbing above the flat top of the cistern.

Curtains have been provided to enclose completely the space between the engine cab and tender with unbroken exterior surfaces. The side curtains are carried on vertical spring rollers attached to the rear of the cab. The free edge of each curtain is bound with stiff metal strips which contain three slot latches. These hook over bolts between plates at the front of the tender side, thus providing a flush gangway closure. The gap between the cab and tender roof is closed by means of a stiff strip of belting canvas.

Except for the application of the cowling and the shrouding, only a few changes have been made in the locomotive and these were in the interest of reducing the need for terminal attention. The locomotive selected, No. 5344, is fitted with Timken roller bearings on all journals, including the tender, except those on the trailer axles. Steam separators for both the main engine and the auxiliary dry pipes were applied to reduce to a minimum the working of water to the cylinders and auxiliaries. A continuous blow-down system for the reduction of encrusting solids was applied to the boiler to warrant operating the locomotive thirty days between washouts. The Baker valve gear is equipped with Alemite high-pressure lubrication. The locomotive is also equipped with a Loco Valve Pilot designed especially for speeds up to 120 m.p.h.

The cowling and shrouding, as well as the exterior of the cab and tender, are finished in gun-metal lacquer, with aluminum lettering and striping.

# Urges Long-Range National Planning

## Government board presents broad outlines for such a project—Transportation a vital element

WASHINGTON, D. C.

CO-ORDINATION of national planning for rail, highway, and waterway transportation is one of the subjects included in a statement of the broad outlines of a program of long-range planning by which the natural resources of the nation may be conserved and utilized for the benefit of all, in the report of the National Resources Board recently submitted to the President and made public on December 17. Pointing out that estimates for river projects based on studies by the Corps of Engineers run as high as $8,000,000,000, the board says that "before any such program is undertaken, co-ordinated transportation plans should be worked out," and adds that "too often in the past expensive construction of waterways has been advocated and approved not with anticipation of their actual use, but primarily as a method of controlling transportation rates." "That method of railroad rate regulation," the report declares, "is extravagant and wasteful of public funds when administrative action can be substituted."

Similarly, the report urges a consideration of relations to other forms of transportation in connection with road-building plans, "instead of a compartmental planning of one method at a time." It is understood that a more detailed discussion of the waterway problem is included in a report of the Water Planning Committee on the Mississippi Valley which is to be released separately. This committee, formerly the Mississippi Valley Committee, reports that "before a long-range program involving large sums to be spent upon our water resources is adopted, further study of the many projects that have been proposed is indispensable to wise action."

"The weakness of our American planning in the past," the report says, "has been the failure to bring the various plans and planners, public and private, into some form of concert with one another, to develop public interest planning in concert with planning in the private interest,"

A discussion of "Public Works and Economic Stabilization" includes the following: "So far as effectiveness in promoting a revival is concerned, a program of equipment-buying by railroads, factories and mines would serve as well as the stimulation of public works.

### What May Be Expected

"This is the first attempt in our national history," the board declares in its letter of transmittal, "to make an inventory of our national assets and of the problems related thereto. Moreover, for the first time it draws together the foresight of the various planning agencies of the federal government and suggests a method for future cooperation." The principal recommendation of the board is the development of a permanent agency to plan for the nation on a scientific basis and with understanding of all elements involved in the problem.

The program, the board says, may be expected, if carried through, among other things, to: Provide for the systematic development of our water resources for purposes of sanitation, power, industrial uses, transportation, recreation, domestic consumption, and other collateral uses on a far higher level than ever before. Remove the recurring menace of great floods and vast losses to persons and property. Assemble basic data in regard to mapping, public finance, and population, necessary for national planning. Avoid the extravagance caused by failure to co-ordinate public works—federal, state, and local; bring about better programming of socially useful public works; prepare public works projects suitable, if desired for use in emergency situations. Provide for continuous long-range planning of land, water, and mineral resources in relation to each other and to the larger background of the social and economic life in which they are set.

The National Resources Board which directed the study and development of the plan is composed of the Secretary of the Interior, Harold I. Ickes, chairman, Frederic A. Delano, vice-chairman, and Secretary of War Dern, Secretary of Agriculture Wallace, Secretary of Commerce Roper, Secretary of Labor Perkins, Relief Administrator Hopkins, Dr. Charles E. Merriam and Dr. Wesley C. Mitchell. The latter two and Mr. Delano comprise the advisory committee. The board was assisted by several technical committees and a staff under the direction of Charles W. Eliot, executive officer. The recommendations of the board include:

That a permanent Water Planning Section of the National Resources Board or its successor be established to proceed as rapidly as is compatible with thoroughness to develop constructive programs for the uses of the country's water resources in the public interest, and to make detailed studies of 17 drainage basins.

That a permanent Public Works Administration be established, based upon the powers, duties and functions of the Emergency Administration of Public Works, and that a series of Advisory Planning Committees be established for continuous study of public works projects, in such fields as water, roads or buildings, and for the formulation of long-range plans and programs in cooperation with state, regional, and federal agencies.

That legislative procedure on public works be developed as an extension of the well-established methods now used for rivers and harbors, public roads, etc., involving—(a) Approval by Congress of a six-year program or longer-range plan revised annually. (b) Appropriation of a lump sum by Congress for allocation by the President among projects included in the approved program. (c) Authorization by Congress for the Administrator of Public Works to negotiate and approve agreements with local, state and regional authorities within limits prescribed by Congress and approved by the President.

That an advisory National Planning Board be set up consisting of five members appointed by the President of the United States, to serve as a general staff for the chief executive, its functions to include: (a) Co-ordination of planning policies within the federal Government. (b) Co-ordination of planning policies between federal, state and local jurisdictions. (c) Stimulation and assistance to the planning agencies within the federal Government and in regions, states and localities. (d) Fundamental research directed toward the develop-

ment of basic national policies and programs.

Declaring that "the great variety of activities carried on under the term 'public works' and the even greater variety of considerations upon which decisions regarding public works are customarily based are nothing short of bewildering," the report discusses "Public Works and Transportation" as one of several examples to illustrate the point. On this subject it says in part:

### Public Works and Transportation

The largest single item in public construction for a number of years has been for streets and highways. Unfortunately, for a large proportion of this work no comprehensive plans related to other factors of state and national development have been available. The economic justification demanded by the Bureau of Public Roads for federal-aid projects and extensive traffic counts have provided against much waste but are hardly adequate as tests after the primary system of roads is established.

Since much more highway and street work is not only probable but in many cases desirable, it is important to have plans ready to secure the full value for the money to be spent.

The primary network of highways for the United States is now well advanced with hard-surfaced and year-around road facilities for a large part of the more densely populated portions of the country. There is even talk of the possibility of overbuilding highways—chiefly from the point of view of indiscriminate construction of heavy-duty roads where planning might distinguish among uses and limit express or heavy traffic to specially constructed lines. Certainly a great saving in cost could be made by such planning.

The next steps in road development would seem to lie primarily in—

(*a*) Classification and development of roads for specialized uses—as heavy-duty highways without grade intersections, freeways, parkways, provisions for pedestrians, bicyclists, and horseback riders, etc.

(*b*) Improvement of alignment, grades, and roadsides on greatly widened rights of way for existing roads.

(*c*) Development of rural roads, and

(*d*) Abolition of grade crossings with railroads, and, where traffic demands, with intersecting highways.

Each of these four aspects of road work will absorb huge sums of money during coming years and long range plans carefully related to other methods of transportation, probable population trends and industrial development must be prepared in advance to avoid wasteful mistakes.

### Elimination of Grade Crossings

Finally, in the matter of grade crossings another huge outlay of funds seems probable, particularly if high-speed, light railroad trains are to become common. The American Engineering Council in a report dated April 7, 1933, suggests the early elimination of 5,000 selected railroad grade crossings at an estimated cost of $500,000,000. It has been variously estimated that further eliminations to the amount of 12 billion dollars would be justified. The prospect of such expenditures justifies forethought and planning to concentrate attention on the most needed cases of grade separation and to avoid any construction where rearrangement of roads or rails for other causes may make a saving possible.

Many rearrangements of transportation facilities might result from consideration of the effective use of all methods of moving goods and people, instead of compartmental planning of one method at a time. For instance, the very extensive highway development in the country has already made it clear that much of the railway branch line mileage is unnecessary, and the towns on railway branch lines can be better and more cheaply served by the highways. This fact, indeed, is one reason why the railways are now suffering so seriously. A partial solution seems to be to convert some of these railway branch lines into motor highways by paying the railways a fair price for these branch-line rights-of-way and substituting for the little-used railway a good highway.

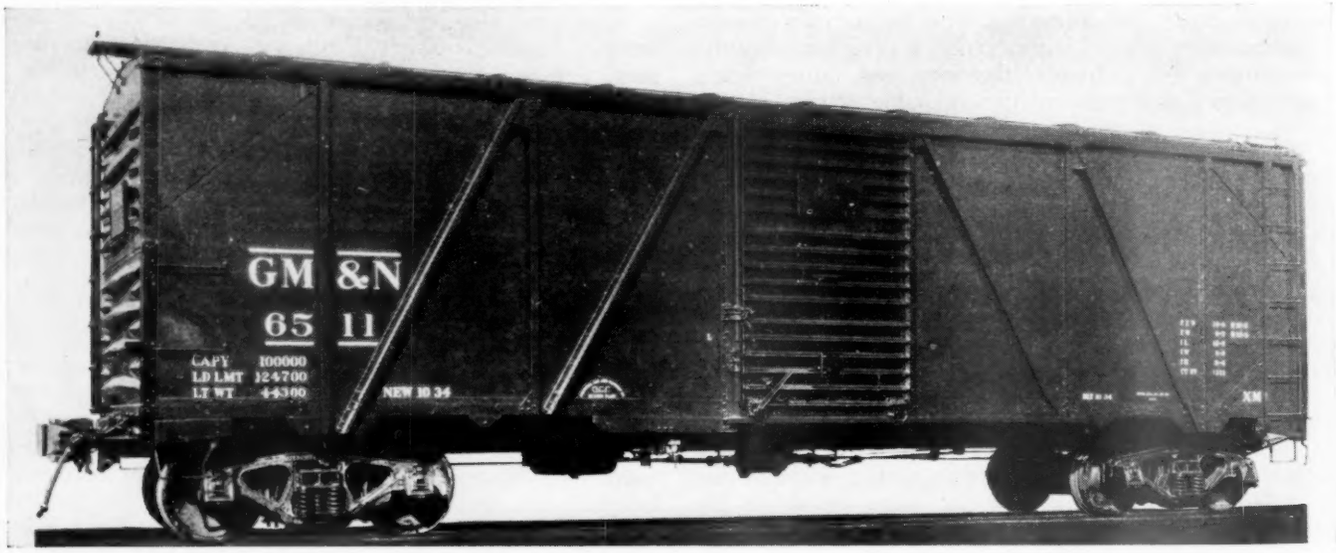
Railroad reconstruction and modernization is now a public work within the terms of the act establishing the present Public Works Administration, and again seems likely to require large sums in the near future.

Not only rail and highway, but also waterway planning must be co-ordinated. As the railway net spread over the country, the importance of streams for transportation suffered at first a relative and later an absolute decline. Despite large expenditures for channel improvements, the freight moving up and down the Mississippi in recent decades has been smaller than the traffic of 60 or 80 years ago. It is only where large vessels can be employed in moving bulky freights, as on the Great Lakes, that inland water transportation has made gains or even held its own. Even in these cases the transport is carried on to an extent not generally realized by privately owned fleets of specialized boats rather than by licensed common carriers.

This brief review of some of the principal transportation agencies in relation to public works illustrates how considerations dealing with one project for one method of transportation inevitably lead to questions concerning all methods of moving goods and people and thence to other matters of human concern. Planning to get the full benefit from our expenditures on a given project must in turn depend on larger planning of related factors.

## Gulf, Mobile & Northern Buys Single-Sheathed Box Cars

THE American Car & Foundry Company has recently delivered 150 steel-frame, single-sheathed box cars of 50 tons capacity to the Gulf, Mobile & Northern. In the design of these cars as much of the construction as possible has been made to conform to the design of the new standard A.R.A. steel-sheathed, wood-lined box car illustrated in Mechanical Division Circular DV-768. The same inside dimensions and the dimensions of the




Single Wood-Sheathed Box Car with the New Standard Double Z-Section Center Sill—Built by American Car & Foundry Company

roofs and ends have been maintained. The underframe is of the same type of construction, including the welded center sill of double Z-section, but the width over the side sills is narrower and the rolled Z-bar posts and diagonal braces are applied on the outside face of the sill. In place of the special Z-bar side plate a standard 4-in. Z-bar was used with the 1½-in. wood sheathing bolted on the inside of the side-frame members and fitted up under the plate.

Part of these cars were equipped with Youngstown steel doors using Camel fixtures and others with Youngstown steel doors using Creco fixtures. All door openings are 6 ft. wide. Other specialties used were Murphy all-steel roofs, Dreadnaught two-piece ends, Cardwell L-25-SA draft gear, Type E couplers, rotary uncoupling rigging, coupler centering device, AB air brakes and the Universal hand brake.

**Principal Dimensions of the G. M. & N. Single-Sheathed Box Cars**

| | |
|---|---|
| Length over strikers | 41 ft. 8¼ in. |
| Length inside | 40 ft. 6 in. |
| Truck centers | 30 ft. 8½ in. |
| Truck wheel-base | 5 ft. 6 in. |
| Width inside | 8 ft. 9⅛ in. |
| Width over side sills | 9 ft. ⅛ in. |
| Width over side plates | 9 ft. 6¾ in. |
| Height over running board | 13 ft. 10¼ in. |
| Height at eaves | 12 ft. 8 7/16 in. |
| Light weight | 45,500 lb. |
| Truck weight (2 trucks) | 15,950 lb. |
| Capacity | 100,000 lb. |
| Load limit | 123,500 lb. |

The trucks were equipped with cast-steel integral-box-type double-truss side frames and cast-steel bolsters, Creco threepoint suspension, Q & C side bearings, and A.R.A. 750-lb., single-plate chilled wheels.

The principal dimensions of these cars are given in the table.

# How to Improve The Railroad Situation

WAYS in which the railroads may improve their own situation and two of the ways in which it is proposed that the federal government may help them were discussed by Co-ordinator Eastman in an address before the Boston Chamber of Commerce on December 20. He referred to the report on the handling of railroad passenger traffic prepared by his Section of Transportation Service, soon to be released, as indicating ways in which the railways may revive their lost passenger traffic, and as to what the government may do he advocated federal regulation of all important forms of transportation by an agency organized to give specialized attention to each form of transportation. This is understood to foreshadow his recommendation for a reorganization of the Interstate Commerce Commission for the purpose. He also advocated a planning agency, relieved from the routine of regulation, to keep fully informed in regard to the entire transportation situation and act as an adviser to the President and Congress. This is believed to indicate a forthcoming recommendation for making the office of co-ordinator a permanent one or for continuing it for a specific period.

Mr. Eastman quoted in advance a paragraph from the passenger report as follows:

> The program which should be followed is one well known in other industries. First, present service demands of the market are thoroughly explored and classified and future demands anticipated; next, the prices which a customer, who does not have to buy, is willing to pay are carefully ascertained; then a type of service filling each demand and within the price limitation is designed; and finally and by no means least, this service is sold through an intelligent and planned method of sales promotion.

"There are, as the report will show," he said, "extraordinary opportunities in the passenger business for such a program." Here is another paragraph from the report:

> The private automobile definitely emerged as an important factor in intercity travel in 1922, when its distance passenger miles had risen to 25 per cent of the rail passenger miles. Within the next three years, passenger travel of private automobiles had grown to be twice that handled by rail. In two years more, the highway was handling four times as many passenger travel miles as the railways. Within seven years, that is, at the end of 1929, the American travel market had been expanded in volume over five-fold. Despite the effects of the economic depression, this travel market in 1933 was still over four times as great as it was in 1920.

"There are many advantages which the railroads can offer over travel by private automobile or bus. They can have, if they will go after it, a much larger share of the great pool of travel which exists in this country today, and at the same time do their part in increasing the travel habit still more. But this will need the same study of the potential market, the same fitting of service to demands, the same adjustment of cost and price to what patrons will pay, and the same ability in salesmanship as have characterized, for example, the production and sale of automobiles.

"Under present conditions no more important task confronts the railroads than the pricing of their service, passenger and freight. It can no longer be left to rate clerks of whatever title and however experienced in tariff technicalities. Nor can it be hogtied by blind adherence to past precedents or sacrosanct 'rate structures.' It calls for railroad statesmen, if that term can be used in connection with railroads—men with a comprehensive knowledge of the nation's travel and commerce and their flows; men who have explored the transportation markets; men whose interest centers on customer requirements and demands and how they can best be met and satisfied; men who have measured the ceilings which the ability of the customer to use an alternative mode of transport has superimposed upon railroad price ranges. It will also need men who have mastered the details of operating, servicing and equipment problems and with the ingenuity to devise means of improving service and increasing traffic volume and revenue by reducing costs and prices.

"Another thing which the railroads will have to do is to cooperate with each other and with their competitors to a much greater extent. All of our studies point directly to the fact that the big opportunities for elimination of waste and improvement of service lie in greater unity of action and in collective dealing with many matters.

"There are many, both in and out of the railroad industry, who think that the only cure for this wasteful and inefficient management of the joint system is actual consolidation, or its equivalent, on a gigantic scale, under either public or private auspices. However, I believe that it is possible to work the problem out in another way without such great consolidations through a better organization of the industry which will leave the individual managements in charge of the many matters which are of only individual concern and yet provide an effective means of control over the matters which are of common concern. Recently the railroads have made a start in that direction by creating the Association of American Railroads, which has been given by its articles of association a far wider authority over the matters which re-

(*Continued on page 835*)

# Motor Transport Section

## Cincinnati Terminals Motorized

### All merchandise freight transferred by trucks of the Cincinnati Motor Terminals Company to eliminate switching problems

AS an outcome of operations begun in 1919, the entire merchandise freight transfer in the Cincinnati terminals, with the exception of an occasional special shipment, is now handled by the motor trucks of the Cincinnati Motor Terminals Company. This company, independently operated, works very closely with the railroads and with the joint operating committee which handles all terminal problems in Cincinnati and its industrial suburbs.

The elimination of transfer switching of l.c.l. freight represents an outstanding improvement in this terminal, not only in economy, but in operating efficiency and elimination of loss and damage claims as well. For example, in its entire 15 years of existence, the Cincinnati Motor Terminals Company has been called upon to pay a total of less than $50 in loss and damage claims.

Another improvement factor lies in the fact that the various freight stations at this important interchange point are situated in congested downtown industrial areas, at a considerable distance apart, with transfer movements down the center of heavy traffic streets necessary in many cases. The growth of the volume of vehicular traffic on three congested streets caused city ordinances to be passed forbidding daytime switching in many localities. Except for the operations of the Motor Terminals Company, the terminal delays would have been such as to cause the loss of much merchandise traffic in these days of speed in transportation.

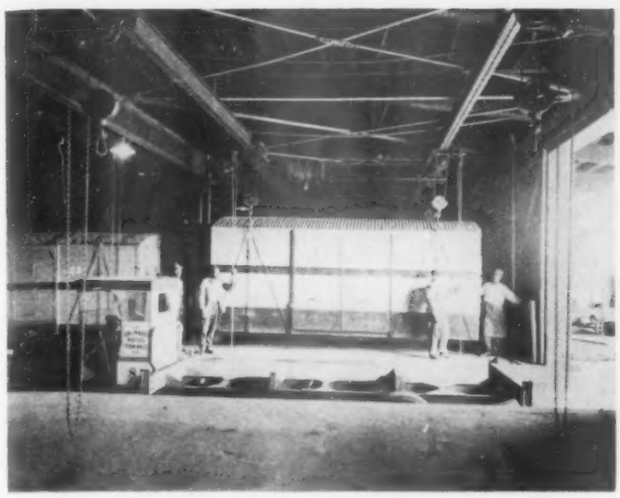
Among the other advantages was the fact that, with the inauguration of pick-up and delivery service on the railways entering Cincinnati, an experienced collection and delivery agency, accustomed to co-operating with the railways, was already available. Of the five railroads providing collection and delivery service in this terminal, three use the facilities of the Cincinnati Motor Terminals Company entirely in providing this service, while the fourth uses it for a portion of its collections and deliveries.

The Cincinnati Motor Terminals Company serves 28 freight stations in the Cincinnati district. The majority of these are in the downtown industrial district, some are two miles out at Brighton, others are in the industrial suburbs of Ivorydale, Ohio, Oakley and Norwood, from 8 to 10 miles distant, and some are across the Ohio river in the Kentucky cities adjoining Cincinnati. A flat charge on all commodities of $1 per ton is made for the transfer of merchandise between the downtown stations, including Brighton, and of $1.50 per ton for the outlying stations. Under this arrangement, with all commodities classed the same, no elaborate billing system is necessary.

#### Equipment Distribution

To handle the business, the terminals company operates 24 White chasses. For greater efficiency in maintenance, this equipment has been completely standardized. The terminals company maintains its own garage and repair shop. One truck is always going through the

Newest Crane Installation at the Pennsylvania's Court Street Freighthouse where Crane Superstructure is Erected Adjacent to the Platform



Truck in Pit, Showing Chassis Level with Station Platform

Body About to Be Lowered onto Truck Chassis

shop for major repairs, and, in addition, an extra White engine is always in the shop. Whenever engine repairs are necessary, instead of taking the truck out of service, its engine is demounted, the extra engine is installed in its place and the truck is returned to operation in a few hours, instead of being held up for days for engine repairs. The demounted engine is then repaired and made ready for installation in the next truck requiring it. A complete record is kept of maintenance, including such costs of operation as gas and oil, so that the relative efficiency of the various drivers may be checked.

The trucks were all originally equipped with solid tires, since, in their movement through the heavy traffic streets, speed is not a factor. As new tires are being bought, however, a change-over to pneumatic tires is being made on all trucks, in anticipation of a state law requiring the use of pneumatics. All these trucks, except one, are engaged in transporting bodies. One of them, equipped with a special body, is used for shipments too broad or too high to be loaded in the regular bodies. The pick-up and delivery service is handled by a fleet of smaller trucks.

The trucks handle a total of 250 demountable truck bodies so designed as to facilitate the loading and unloading of merchandise freight from and to the transfer platforms. Repairs to these bodies are also made at the terminals company shops, and these repairs are also scheduled so as to provide for the maximum availability of the bodies at all times. This is further aided by the simple though strong construction of the bodies, which require relatively few repairs.

### Crane Design

The various freight stations served were not built, of course, with the idea of efficient transfer of freight from cars to trucks and vice versa in mind. The terminals company had to take the facilities as they found them and design their devices to fit the widely varying circumstances existing. The truck bodies are handled between the trucks and the platforms by overhead cranes, of which there are 69 in service in the Cincinnati terminal.

At many stations, the operation is accomplished by means of street level pits extending into the freight-house platforms. The trucks back into these pits, under the cranes, which lift the bodies off or on as the case may be. At most stations there are a number of these pits, and, in co-operation with the freight-house supervisors, the bodies are so placed as to provide for the minimum of platform trucking between the cars and the car bodies.

In some instances, the overhead clearance is sufficient to provide for the lifting of the bodies over each other, which permits an even greater flexibility of operation, and eliminates the necessity sometimes encountered of moving one or two bodies to get at a third.

In some cases, the overhead clearance is insufficient to permit the installation of the cranes inside the freight-house. Several means have been adopted to surmount this difficulty, but the newest installation, at the Court Street freighthouse of the Pennsylvania, is quite ingenious and efficient. Here, at street level, outside the freighthouse, a crane superstructure has been erected adjacent to the platform. Nine pits are provided, and, next to the platform, the bodies are set on concrete blocks to bring them to platform level and permit easy hand-trucking in and out. The fronts of the bodies are held on steel supports, which are hinged to permit the uninterrupted passage of the motor truck wheels.

### Average Body-Transfer Time Under Five Minutes

So efficient have these transfer operations of bodies become that the average time required for the transfer is slightly less than five minutes. At the Court Street station, trucks arrive with bodies, back into the designated pit, the bodies are lifted from the chasses by the

Truck with Body Ready for a Transfer Movement

crane, the truck drives out from under and the body is lowered on to the blocks ready for loading and unloading. This operation is frequently completed, with the modern installation at this station, in as little as three minutes.

The loading and unloading operations are greatly facilitated by the fact that no fastenings are necessary, the bodies sliding into and out of lugs on the channel irons of the chassis, the lugs holding the body securely in place while enroute, but permitting a straight lifting or lowering operation without hindrance. The movable control boards that operate the crane are so simple that it does not require a specially trained man to handle them.

### Operations Closely Supervised

The administrative expense of the terminals company is quite low, the force consisting of a manager, a field superintendent, a dispatcher and a clerk. Nonetheless, the operations are carefully supervised.

A daily operating report is prepared, showing the following complete lineup of all operations:

Trucks—In Use
Trucks—Not in Use
Tons—Transported
Trips—Loaded
Trips—Empty
Trips—Chassis
Total Trips
Average Weight Per Body Load
Total Hours Worked
Average Time—Per Trip
Total Mileage
Gasoline Consumed—Gallons
Oil Consumed—Gallons
Delays—R. R. Stations
Delays—CMT Co. Trucks
Delays—CMT Co. Hoists
Delays—CMT Co. Bodies

This information is compiled largely from the dispatcher's report. This report, kept currently from hour to hour, shows the movements of all the trucks. The Cincinnati Motor Terminals Company has a private line from all freight stations to the dispatcher's office, and all trucks are dispatched for one trip only. When this is completed, the driver phones in for further instructions.

### Dispatcher Constantly in Touch with Drivers

A record of each trip of each truck is always before the dispatcher, showing departure and arrival times, and the mileage, classified as to loaded, empty body and empty chassis mileage, together with a record of any delays and their cause. Even though only five minutes are allowed for the loading or unloading operation and delays are recorded after that period, there are extremely few delays on the record chargeable to the truck drivers.

Most of the stations served are either inbound or outbound exclusively, necessitating the empty movement of the truck bodies, either from the outbound stations after unloading, or to the inbound stations after loading. Nonetheless, by efficient supervision of the operations and a centralized dispatching system, the loaded movement averages between 55 and 60 per cent of the total, the empty body movement between 25 and 30 per cent, and the empty chassis movement between 10 and 15 per cent.

The officers of the railways using the Cincinnati terminal are unanimous in describing the operations of the Cincinnati Motor Terminals Company as extremely efficient and economical.

# New Bus-Truck Service in Montana

AN extensive highway transportation system, which will be co-ordinated with Northern Pacific railroad facilities, has been inaugurated in the last few months by the Northern Pacific Transport Company, subsidiary of the Northern Pacific Railway. The transport company is now making an immediate expenditure of about $150,000 for equipment to operate exclusive freight, exclusive passenger and combination freight-and-passenger service, all tied in with railroad service. This additional operation contemplates service of more than 500,000 bus and truck miles a year. The program calls for a radical departure in transportation performance by a northern transcontinental railroad.

The Montana Railroad Commission recently authorized the transport company to perform exclusive passenger service, exclusive freight service and combination freight-and-passenger service through the issuance of eight permits affecting a large portion of the state. The system is being set up to provide for maximum use of existing railroad facilities with minimum use of the highways, to afford much improved and faster local service into, out of and between Montana distributing centers. The new transportation program will result in the employment of additional men, and only railroad employees will be hired in the additional service.

The Northern Pacific Transport Co. has been operating combination freight-and-passenger facilities between Billings and Miles City and between Billings and Bridger for more than two years, and the Montana commission has authorized the transport company to carry on the following additional highway operations:

Exclusive passenger service between Glendive and Bozeman, with daily service in each direction.

Exclusive freight service between Glendive and Bozeman.

Exclusive freight service between Butte and Missoula.

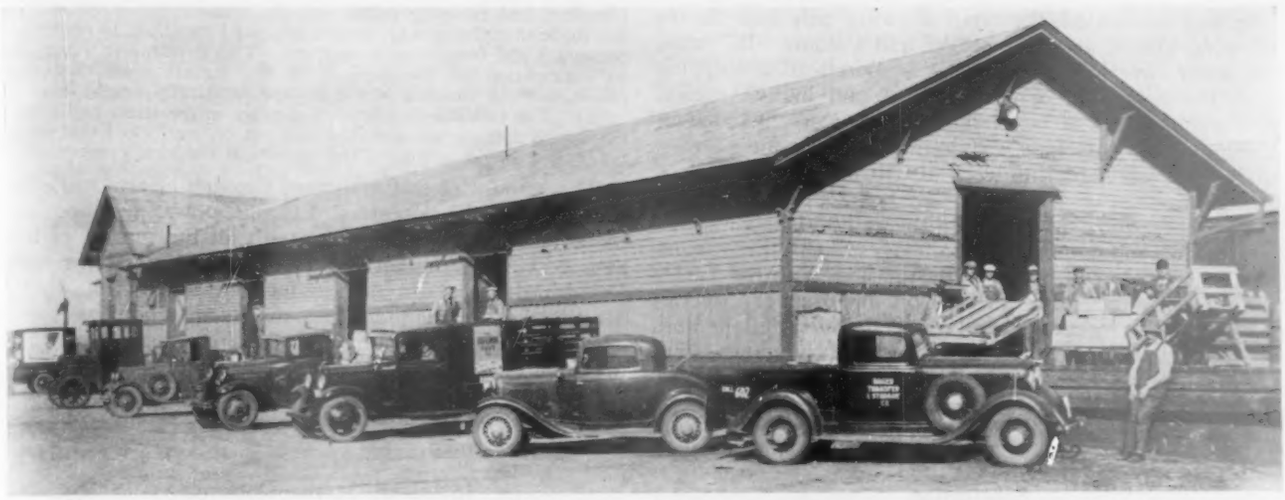
Combination freight-and-passenger service between Livingston and Gardiner; Livingston and Wilsall; Bozeman and Alder; Butte and Norris, and Helena and Philipsburg.

While the new service will be provided over a territory extending from Glendive to Missoula, operations will be conducted in units between Glendive and Billings, Billings and Bozeman, Bozeman and Butte, Butte and Missoula, in order to make available a flexibility in schedules which experience has demonstrated is necessary. This method of operation will allow any change in schedules which may be made necessary in any particular district.

The new co-ordinated freight service will provide storedoor delivery and pick-up of intrastate business at rail rates.

The additional passenger service was inaugurated with temporary equipment for the present. Tickets purchased for either rail or highway passenger transportation will be interchangeable.

There will be no delay in establishing this entire additional service. The whole program will be put into effect as soon as permanent equipment can be manufactured. Orders already have been placed. In some cases service will begin immediately with temporary equipment. The passenger equipment will be of all steel welded body type, especially built for the transport company. The combination freight-and-passenger equipment will be of the same type which the transport company has been using successfully between Billings and Bridger.



Local Draymen Calling for Storedoor Freight at North Platte, Neb.

# Union Pacific a Storedoor Pioneer

## Service started in 1931 has been materially extended to meet increasing demand

PICK-UP and delivery service was begun in an experimental fashion on the Oregon lines of the Union Pacific System as early as April 14, 1931, thus making the Union Pacific one of the pioneers in this type of service. Following a few months' successful operation in Oregon, a similar service was afforded on intrastate business only in Nebraska, including points on the St. Joseph & Grand Island, beginning June 12, 1931. On July 16, 1931, a similar intrastate service in Kansas was put into effect

### Initial Services Through Subsidiary

For some time, the Kansas and Nebraska services were operated by a U. P. subsidiary, the Union Pacific Stages, but following agitation on the part of the shippers for interstate service between Kansas and Nebraska points, the entire operation was taken over by the Union Pacific proper. This transfer occurred in Kansas on April 25, 1933, and in Nebraska, November 1, 1933.

Storedoor pick-up and delivery service was established on the Union Pacific, as on all other roads operating such service, for the purpose of improving merchandise handling so as to endeavor to meet highway competition. In the case of the Kansas and Nebraska operations, however, there was a special competitive situation that had to be met.

By 1931, the trucking of livestock from the Nebraska and Kansas producing centers into the huge markets at the Omaha and Kansas City stockyards was in full swing. Trucks hauling livestock into these markets were eagerly soliciting return loading at absurdly low rates in order to avoid an empty back haul, and merchandise transportation from the manufacturing and jobbing centers of Omaha and Kansas City to Nebraska and Kansas points was in a chaotic condition.

Not only was the Union Pacific faced with the loss of much of its merchandise traffic, but local draymen along its lines were being driven out of business. This feature, too, was taken care of in the inauguration of this service.

### Rates and Operations

At the inception of this service the Union Pacific Stages quoted rates substantially equal to the rates quoted by the responsible highway trucking companies, including the pick-up and delivery service. The ordinary classifica-

Columbus, Neb., Is an Important Point for the U. P. Collection and Delivery Service

tion was eliminated, the tariff showing only two classes of rates, known as Column "A" and Column "B" rates, the latter covering most articles of merchandise shipped, with the exception of certain light and bulky articles, and some classes of perishables, which were included in Column "A." Packing requirements for traffic moving under this arrangement were also made somewhat less stringent.

The operations provided for the railroad handling all freight for the Union Pacific Stages from the freight stations at points of origin to destination, with the U. P. Stages responsible for all pick-up and delivery operations. All U. P. agents involved were given definite and complete instructions as to methods of handling, and the agents at each station became the supervising officers for all U. P. Stages employees, in addition to supervising the work of the draymen under contract with the U. P. Stages.

### Solicitation

At the time of the inception of this service, there already existed on the Union Pacific an active employees' solicitation organization known as the Union Pacific Employee Boosters League. It was felt that the efforts of this association might well be directed toward the solicitation of this type of traffic, and its members were fully educated as to the advantages to shippers and receivers of freight using this means of transportation. The employees were given a complete picture of the new service together with talking points as to why the service should be used, as follows:

(a) In the handling of carload freight, particularly heavy moving commodities such as grain, coal, lumber, etc., the railroad is a real necessity to the shipper. It is at once apparent that if the railroad discontinued operation there would not be available a means of transporting heavy moving commodities from the points at which they are produced to markets of consumption with anything like the promptness, regularity, or economy with which they are transported by the railroads.

(b) The railroad has been a pioneer in the industrial development of the country, and has constructed lines of railroad in unsettled parts of the country in anticipation of future industrial and agricultural development, which development has resulted almost solely from the ability of the producers and manufacturers to reach markets of consumption by means of railroad transportation. Industrial development is continually progressing and the railroad is an important and material factor in it.

(c) The expeditious and regular handling of mail by the railroad is one of the utmost interest and value, not only to shippers and receivers of freight shipments, but as well to the residents of all communities served by the railroad. In this connection also the operation of up-to-date passenger service on fast schedules is important to all. It is doubtful whether any transportation agency other than the railroad ever will be able to accomplish the same results as are obtained today from the efficient manner in which passenger and mail trains are operated.

(d) The railroad is entitled to a great consideration by the traveling and shipping public for the tremendous investment it has made in right-of-way, station and yard facilities, locomotives, passenger and freight equipment, etc. This investment was made in anticipation of the support of the traveling and shipping public, without which it would become practically a total loss.

(e) The railroad is a heavy tax payer in the states and counties which it traverses, and it should not be overlooked that these taxes go a long way toward the support of the local governments.

The amount of traffic secured through efforts made by members of the Boosters' League amply justified the pains taken to acquaint them with all the factors of the new service. Another valuable solicitation factor was found in the local draymen under contract with the U. P. Stages who became practically dependent upon this service for their means of livelihood. For over two years, the volume of traffic obtained by means of the new service and the reduced rates and packing requirements was extremely gratifying and showed a practically continuous upward trend.

### Interstate Service Demanded

The intrastate rates quoted by the U. P. Stages were not subject to use in the calculation of through rates, so that the interstate rate structure remained undisturbed. When, however, on pressure from certain shippers, the U. P. was ordered to make this service interstate, a different picture presented itself.

Delivering Pick-Up Freight to the Omaha Freight Station of the U. P.

Faced with the breaking down of the entire less-than-carload rate structure, as soon as the operation was made interstate as well as intrastate, the Union Pacific Stages tariff was cancelled, and a Union Pacific Railroad tariff issued in its place—the new tariff returning to the railroad's usual less-than-carload rates, classification and packing requirements, with no additional charge for the pick-up and delivery service. This tariff, effective on November 1, 1933, is still in effect.

### Reliable Service a Traffic Magnet

The inevitable result of this increase in rates and packing requirements, which once more removed the railroad from a comparative parity with its highway competitors in these respects, was a loss of business. After the initial falling off, however, which, incidentally, was less than had been expected, traffic moving under this service has shown a satisfactory recovery.

This is attributable to several causes. The various solicitation forces continued their efforts unabated. The increased speed of handling was also continued, and, in some cases the time was improved. All of the trains handling this merchandise traffic were speeded up, and it is now possible to deliver freight at the Omaha freight station, for example, on or before five o'clock in the evening and have it at the consignee's storedoor at North

Platte, Neb., 282 miles away, between seven and eight the following morning.

The reliability of the service, as well as the speed, has proved attractive to shippers. Not only is there much less loss and damage enroute on the rail shipments, but, when this does occur, the shipper is assured of prompt and fair settlement of his claim, which is by no means always the case on claims filed with competing, and often irresponsible transportation agencies.

Another factor of reliability is found in the handling of C. O. D. shipments. A liberal provision is made for the handling and collecting of invoices on goods under a C. O. D. privilege at special charges named in the tariff, the transportation rates applicable on C. O. D. shipments being the same as those on other shipments. Since the shippers have found it practically impossible to rely on trucking lines in connection with C. O. D. shipments, a large proportion of this traffic is now moving by rail under the pick-up and delivery service.

Practically qualifying as "veterans" of pick-up and delivery service after nearly four years' experience with this type of operation, the U. P. officers feel that this service has been of material assistance in meeting highway competition in the territory served.

## How to Improve The Railroad Situation

(*Continued from page 829*)

late to the operation of the railroads as a joint system of transportation than any central organization of the railroads has hitherto had. It is a promising undertaking and merits full cooperation and assistance.

"Another high light in the railroad situation is the opportunity for improving service and revenues by the modernization of equipment and other facilities and the proper utilization of the other transportation agencies. Many other countries are headed in this direction, and some of them have gone farther than we have. Incidentally, I suggest to the Association of American Railroads that it send men abroad to study operations in other countries. I am willing to guarantee that if they will divest themselves of normal American self-satisfaction and conceit, they will pick up some very useful ideas.

"Not only are there these opportunities, but adversity and competition and modern science have had their usual results, so that the chances for important changes in railroad motive power and equipment which will lower costs and improve service are better than they have been in many years. Do not get the idea that I advocate too precipitate a modernization of railroad equipment. These new devices must be tried out thoroughly before they are put to extensive use, for some of them are still in the development stage. In this connection I have great hopes of the scientific research organization which the Association of American Railroads is to establish. Our railroads have had great need for such a centralized staff which can serve them all alike. Their mechanical officers have worked in many different and divergent directions and mostly without the necessary equipment for adequate research and testing. They have often been the prey of the outside manufacturer and salesman. Far too little progress has been made toward reasonable standardization and simplified practice.

"I come now to the relation of the federal government to this transportation situation. It can help in various ways, and I shall now mention only one or two of the more important points. The facts warrant the conclusion that federal regulation should be extended equally over all the important forms of transportation for the protection both of the carriers themselves and of the public which they undertake to serve. It is also clear that this regulation like the operation of the carriers, must itself be coordinated, and that the way to accomplish this result is to place it in the hands of a single agency which will cover the field and be informed in regard to all phases of the entire transportation situation. That agency must be so organized, however, that it can give the specialized attention to each form of transportation which its own peculiar conditions require and yet deal consistently with them all.

"Nor is it enough to stop with mere regulation and the cure of evils after they arise. We have in the past done too little in the way of planning and prevention. I have in mind a governmental agency, relieved from the routine of regulation, with the duty of keeping fully informed in regard to the entire transportation situation and acting as an adviser to the President and Congress. It would undertake to encourage development of each form of transportation in line with its potential capacity to render service, to discourage its uneconomic use where some other agency can better meet the public needs, to check the provision of new facilities which will serve no sound economic purpose, to promote the cooperation of the various agencies in needed joint operation, and to stimulate research and experimentation in means of improving service. This agency would have authority to investigate any broad question in transportation which it finds to be in need of investigation, such as the general principles of rate making or methods of management and organization. It would undertake to bring opposing groups together for the purpose of reconciling their differences of opinion and composing controversies. It would keep in touch with all the departments of government which deal with transportation. It would report each year on the state of transportation in the nation and recommend any desirable changes in legislation.

"The thought, in short, is to keep the government in close contact with transportation, not as a mere regulatory force, but for the purpose of comprehending trends, forseeing difficulties before they arise, bringing the component parts into cooperation with each other, and endeavoring to shape the course of government policy and action to the end of securing a national system of transportation which will keep abreast of developments in the art of transportation, meet the needs of the shipping and traveling public as they should be met, and at the same time avoid unnecessary duplication, lost motion, and waste. I have given this thought to you in a capsule, so to speak, but I hope to develop it more fully later on. There is more in it than may appear on the surface."

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THE WESTERN AUSTRALIA GOVERNMENT RAILWAYS for the year ending June 30, 1934, reported a net loss after interest charges of £275,644, as compared with a 1932-33 deficit of £175,681. Gross revenues for the past fiscal year totaled £2,919,-315, a decrease of £12,825 over the previous year while operating expenses increased £74,918. This latter, the report says, was due to an additional expenditure of £30,000 which the railways were required to make under the terms of the financial emergency act of 1934, to augmented wage costs resulting from the restoration of the 44-hour week to all employees, and to special maintenance expenditures amounting to £54,000. In presenting an analysis of 1933-34 revenue sources the report finds "very heartening" the increase in passenger travel which as compared with the previous year brought additional passenger revenues amounting to £23,579.

# NEWS

## New Transport Legislation Considered by President

Program understood to have been taken up in recent conferences with Co-ordinator

President Roosevelt is understood to have taken up recently active consideration of a program of transportation legislation to be pressed at the coming session of Congress. Co-ordinator Eastman held a brief conference with him at the White House on December 13 and a longer one on December 17 and representatives of the railroads, the shippers, the railroad labor organizations, and others have been in touch with Mr. Eastman on the subject. The Co-ordinator is expected to have a series of reports on several phases on proposed legislation ready for presentation soon after Congress assembles on January 3, although they are to be submitted in the first place to the Interstate Commerce Commission for its comments and by it transmitted to the President and Congress.

Mr. Eastman has indicated in public addresses that he will reiterate his recommendations of last March for regulation by the Interstate Commerce Commission of truck, bus, and waterway transportation, possibly with some modifications, and further reports are forthcoming dealing with the subjects of subsidization of water and highway transportation and proposed labor legislation, including a pension plan and one for the payment of a dismissal wage to employees laid off as a result of economy projects. Further recommendations are also expected carrying out suggestions made in general terms in the report of last January for continuing the office of co-ordinator, with some modifications, either permanently or for a specific period, for consolidation legislation, and for amending the railroad provisions of the bankruptcy law. The law under which Mr. Eastman is now serving expires on June 16.

It is reported that he has proposed an increase in the membership of the Interstate Commerce Commission from 11 to 15. President Roosevelt said on Wednesday that the subject was still in the conversation stage and the first indication of his views as to what ought to be done is expected in his annual message to Congress in January. The annual message will discuss principles and objectives and separate messages later will discuss the details of proposed legislation.

In addition to the recommendations made by Co-ordinator Eastman, the President is to receive advice from the President's Transportation Committee, of which Secretary Roper of the Department of Commerce is chairman. Among other subjects this committee has had made an elaborate study of railway and highway transportation abroad and the co-ordination policies adopted in other countries.

Representative Rayburn, of Texas, who has withdrawn from the contest for Speaker of the House and who therefore will continue as chairman of the committee on interstate and foreign commerce in the next session, has announced his intention of renewing efforts to pass legislation for the regulation of motor bus and truck transportation on which extensive hearings were held by his committee in the last session. Similar legislation in the Senate will come before the committee on interstate commerce, for which a new chairman will be selected for the new session as Senator Dill, who was chairman, did not run for re-election. Senator E. D. Smith, of South Carolina, has the seniority claim to this chairmanship, but if he should prefer to retain his chairmanship of the committee on agriculture and forestry Senator Burton K. Wheeler, of Montana, would be next in line.

### Katy Merchandise Cars 99.79 Per Cent on Time

During November, only 13 merchandise cars out of more than 6,100 moved on the Missouri-Kansas-Texas failed to make schedule time, the on-time performance being 99.79 per cent.

### Tate Elected I.C.C. Chairman for 1935

Pursuant to the Interstate Commerce Commission's rotation policy, Commissioner Hugh M. Tate has been elected chairman for the year 1935. He will succeed William E. Lee.

### New England Railroad Club

The New England Railroad Club will hold its next meeting at the Copley-Plaza hotel, Boston, on Tuesday evening, January 8. W. J. Patterson, director of the Bureau of Safety, I. C. C., will speak on co-ordination between departments of the individual railroad.

### A. T. & N. Officers Added to Trustees Panel

The Interstate Commerce Commission has issued an order adding to its panel of standing trustees the names of John T. Cochrane, president of the Alabama, Tennessee & Northern; William H. Armbrecht, general attorney; and R. V. Taylor, of Mobile, Ala., formerly a member of the Interstate Commerce Commission.

## Approve Export and Import Rates for Southern Ports

Schedules proposed by southern railroads found justified with certain exceptions

The Interstate Commerce Commission has issued a report and order finding justified, with some exceptions, and subject to certain limitations, schedules proposing changes in export and import rates between the Gulf, South Atlantic, and Florida ports, on the one hand, and interior territory, proposed by the southern railroads to become effective March 3, 1932, and later dates, which were suspended. In general the rates represent reductions designed to enable the roads serving the southern ports and their connections to compete more effectively with those serving north Atlantic ports and were opposed by the eastern lines, although the latter had offered to concur in rates somewhat higher. The southern lines took the position that the rates advocated are lower than they would seek to establish were it not for the compelling competition of the north Atlantic ports and the serious disadvantages of the southern ports in meeting this competition.

The commission found that the suspended schedules to which the eastern lines were respondents have not been justified but that those to which the southern roads are respondents have been justified, with certain defined exceptions and subject to a limitation that proposed rates which would yield on the lowest minimum weight on the respective commodities earnings of less than 5 mills per ton per mile where the carload minimum weight is 40,000 pounds or more, and 10 cents per car per mile where the carload minimum weight is less than 40,000 pounds have not been justified. The eastern lines will be expected to join with the southern lines in the establishment of import as well as export class and commodity rates on the bases found justified, in so far as there is a reasonable need therefor. The commission's conclusions include the following:

"The traffic on which the suspended rates would apply, if permitted to become effective, is through traffic moving between the interior territory and foreign countries. It may, insofar as adequate physical transportation facilities are concerned, move either (a) via the southern ports over routes embracing the southern lines between those ports and the interior territory, or (b) via the north Atlantic ports over routes embracing the eastern lines between those ports and the interior terri-

(*Continued on page 842*)

# First Month of Zephyr Brings Traffic Increase

## Burlington officers report also that it has taken little from other trains

The operation of the Zephyr of the Chicago, Burlington & Quincy between Lincoln, Neb., and Kansas City, Mo., during its first 30-day period, resulted in increased passenger business. During this period the schedule was maintained each day, except westbound into Lincoln on four days when there were slight delays due to interference of other trains and on one occasion when the Zephyr was hit by a farmer's truck. Between Omaha, Neb., and Lincoln in both directions, the number of passengers carried increased 111 per cent, as compared with the traffic on steam trains in October, 1934. Southbound, passengers leaving Omaha and Council Bluffs for all points averaged 49 per trip, as compared with 26 on steam trains in October, an increase of 88 per cent. Southbound into Kansas City, passengers from all points averaged 60 per trip, as compared with 35 during October, an increase of 71 per cent. Northbound out of Kansas City, passengers for all points averaged 57 per trip, as compared with 31 during October, an increase of 84 per cent. Northbound into Council Bluffs and Omaha, passengers from all points averaged 49 per trip, as compared with 21 during October, an increase of 135 per cent.

The total number of passengers between any points in both directions averaged 105 per trip, as compared with 62 during October, an increase of 69 per cent, but the average distance traveled per passenger was greater on the Zephyr than on the steam trains, because passengers carried one mile per train-mile on the Zephyr during this 30-day period averaged 29, as compared with 25 on the steam trains during October, an increase of 96 per cent.

According to officers of the road the Zephyr has taken little traffic away from the other trains—two in each direction. The passengers carried one mile per train-mile on the four steam trains decreased 24 per cent in November, 1933, as compared with October, 1933, whereas the passengers carried one mile per train-mile on these four trains decreased only 7.6 per cent in November, 1934, as compared with October, 1934.

The 72 seats on the Zephyr were inadequate on six southbound and four northbound trips. On November 28, 99 passengers were on the train at one time, while on 6 of the 10 trips the number exceeded 80. On December 2, a steam train supplemented the Zephyr service, due to holiday traffic, carrying northbound 183 passengers in addition to the total of 144 carried on the Zephyr. Since December 7, this supplementary steam service has been operating daily in both directions, primarily to handle the increased volume of U. S. mail and the express.

As passengers on the Zephyr present their tickets, the conductor asks "Are you riding this train because it is the Zephyr or would you be making a trip at this particular time if this were an ordinary steam train instead of the Zephyr?" During the 25-day period, from November 16 to December 10, 58 per cent of the persons replying said they would have used an ordinary train at that time, 17 per cent would have used some other steam trains except for the Zephyr, 13 would have used an automobile, bus or airplane and 12 per cent would not have been making the trip at all and were merely riding the Zephyr out of curiosity. During the first five days of operation the latter group amounted to 67 per cent.

Transport Media of Frontier Days—The Stagecoach and the Oxcart—Were on Hand at Lincoln, Nebr., to Give the Burlington Zephyr a Send-Off on Its Recent Inaugural Run in Revenue Service. The Increased Traffic Which the Zephyr Has Attracted Has Prompted the Burlington to Order a Fourth Car to Be Added to It.

## I. C. C. Inquiring into Official Expense Accounts

Pursuant to an order of the Interstate Commerce Commission, Division 4, adopted on November 19, Secretary McGinty of the commission has sent to Class I railways forms on which they are directed to file, on or before March 1, lists of officers, including all executives, officials, and staff assistants, who were paid $1,000 or more during the year 1934 for traveling and other expenses, giving for each officer the total amount of such expenses for the year.

# Regulation of All Carriers Urged by I. C. C. Chairman

## Should be so extended to eliminate discriminations and encourage co-ordination, says Lee

Regulation of transportation agencies which compete with those that are under regulation was advocated by William E. Lee, chairman of the Interstate Commerce Commission, in a radio address at Washington on December 17 outlining the work of the commission.

"With no requirement that the rates and charges of these unregulated transportation agences be published and strictly adhered to," he said, "shippers using these forms of transportation encounter the same charcater of discrimination as prevailed among railroad users before the act to regulate commerce was passed. As a further justification for regulation there should be such co-ordination between all forms of transportation that each may be utilized in the sphere where it can best and most economically serve the public. This is impossible under present conditions. The result is much wasteful transportation and the public does not get the maximum of service at a minimum cost. The existing unregulated competition has played havoc with many rate structures. With particular reference to the lack of regulation of motor vehicles operating on the highways, I stated in an address made by me before the convention of the National Association of Railroad and Utilities Commissioners in Washington last month, that "Considering the appalling loss of life and injuries caused by motor vehicle traffic on the highways, I believe it is of paramount importance in any scheme for the regulation of such carriers that the utmost consideration should be given to this subject. I am firmly of the opinion that there should be legislation that will bring about a proper restriction of the length, height, width, and weight of motor vehicles, a limitation of the number and size of trailers, and—probably the most important of all—a requirement that only qualified and experienced drivers be permitted to operate proprly equipped and regularly inspected motor vehicles, under limitations of reasonable hours of service." I do not believe that other transportation agencies should be regulated in precisely the same way or to the same degree as the railroads, but each should have a form of regulation appropriate to its particular type of transportation. I do not believe that regulatory legislation should be of a restrictive character but with a view to bringing order out of the present chaotic regulated-unregulated transportation scramble. It should not be with a view to returning traffic to the railroads unless such traffic can be hauled more economically by them, for, as the commission said as far back as 1928: "Railroads have no more economic right to any traffic than had the canal and stage coaches which opposed the construction of railways on the ground that they would take traffic already being carried on the canals and highways."

In discussing the subject of valuation

Chairman Lee said he wanted to leave with his listeners the assurance that money spent in the valuation of the railroads has not been wasted. "It is fortunate, however, at a time when the nation is confronted with the complicated problem of the future of the railroads, and the extent to which they must be reorganized or supported by the government," he said, "that the Congress, the commission, and the public have available a current inventory or record not only of the property itself, with its physical and functional depreciation recorded, but data from which may be determined, among other things, the original cost, the amount of money invested, as well as the cost of reproducton of the properties in their present condition. These afford far reaching light either in penetrating the question 'what is the matter with the railroads' or what must be done in treating individual cases."

## The "Flying Crow" Restored

The Kansas City Southern, on December 17, restored the "Flying Crow," its Kansas City-Port Arthur passenger train, which was discontinued more than a year ago.

## $170,601 Deficit for Alaska Railroad

A deficit of $170,601 was incurred by the government's Alaska Railroad for the fiscal year ended June 30, 1934, according to the annual report of the Secretary of the Interior. Revenue from all sources, including non-operating income, was $1,293,684 for the year an increase of $77,856 as compared with the year before, but operating expenses increased. The payroll alone was $1,242,700, an increase of $77,263.

## Chicago-Twin Cities Streamlined Train Service in February

The two streamlined articulated trains ordered by the Chicago, Burlington & Quincy from the Edward G. Budd Manufacturing Company for operation between Chicago and the Twin Cities will be placed in service about the middle of February. Present plans call for a schedule of 6½ hr. Chicago to St. Paul and 7 hr. to Minneapolis.

## Boulder Derails D. & R. G. W. Train

An eastbound Denver & Rio Grande Western passenger train struck a large boulder at Niger Hill, Colo., on December 12, throwing the locomotive into the Colorado river and killing the engineman and fireman. A baggage car and coach were derailed but none of the 40 passengers on the train enroute from Salt Lake City, Utah, to Denver, Colo., was hurt. The train struck the boulder which was apparently washed down from a mud hill as the train rounded a curve.

## November Locomotive Shipments

November shipments of railroad locomotives from the country's principal manufacturing plants totaled 26 locomotives as compared with 12 in October and 2 in November, 1933, according to reports received by the Bureau of the Census, U. S. Department of Commerce. Unfilled orders at the end of November totaled 127 locomotives, including 37 steam and 90 electric, as compared with unfilled orders for 82, including 5 steam and 77 electric, at the end of November, 1933. These figures do not include data on locomotives built by railroads in their own shops.

## A. A. R. Safety Section

Disablement, disaster or death are successive dangers to be guarded against by all railroad officers and employees, as emphasized in the January circular of the Safety section of the Association of American Railroads, as announced by L. G. Bentley, chairman. The circular is addressed to officers and foremen particularly, and it consists mainly of a series of pictures showing the fate of men who do not take seriously their duty to look out for their own bodily safety. The special exhortation addressed to officers is to take time to know that their instructions are understood.

## Supreme Court to Review Pension Law Decision

The Supreme Court of the United States, by an order entered on December 17, granted the petition for a writ of certiorari filed by the solicitor general of the United States which had asked the highest court to review the decision of Chief Justice Wheat of the supreme court of the District of Columbia holding unconstitutional the railroad retirement act passed in the last session of Congress, without further proceedings in the court of appeals of the District of Columbia. The solicitor general had urged a prompt determination of the matter by the Supreme Court.

## Shippers' Advisory Board at New York

The Atlantic States Shippers' Advisory Board will hold its next meeting at the Pennsylvania Hotel, New York City, on January 10. A feature of this meeting will be a reunion of the pioneer members, who attended the organization of this board, at the Yale Club, New York city, on January 3, 1924.

The Luncheon, which is to be held in connection with the Traffic Club of New York, will be addressed by R. V. Fletcher, general counsel of the Association of American Railroads, and L. S. Comstock, president of the Merchants' Association of New York.

## Tax Deductions Allowed

Prior to 1913 the Union Pacific, directly or through a subsidiary, sold three issues of bonds, all maturing at dates subsequent to 1923. All were sold at a discount and the company paid or allowed to bankers an additional amount as commissions for marketing the bonds. The commissions and discounts, amortized over the periods from dates of issue to maturity of the bonds, exceeded $300,000 in each of its taxable years, 1918 to 1923 inclusive. The company kept its books and made its tax returns on the accrual basis.

The United States Supreme Court, affirming the Second Circuit Court of Appeals, holds that the company was entitled to deduct from gross income, in its tax returns for 1918 to 1923, the amortized amount of commissions so paid as well as discounts.—Helvering v. Union Pacific. Decided Dec. 3, 1934. Opinion by Mr. Justice Stone.

The Court said that the opinion in Old Colony v. Commissioner, 284 U. S. 552, did not require a different conclusion because the commissions in the present case were allowed before 1913.

## R.F.C. Receives Bids on Equipment Trusts

The Reconstruction Finance Corporation on December 18 offered at public sale two issues of equipment trust certificates taken by the Public Works Administration in connection with its loans to railroads for new equipment. For $13,538,000 of Chesapeake & Ohio 4 per cent certificates it received a bid of 1001.255 per $1000 from Halsey Stuart & Co., and associates. For $1,220,000 of Northern Pacific 4 per cent certificates it received one bid of 1001.255 and another of 1002.9 from Stroud & Co., and E. H. Rollins & Co., of Philadelphia. The certificates were awarded to the highest bidders.

The P. W. A. had previously sold $3,604,000 of railroad securities.

## New Norfolk & Western Coal Bureau Opened at Cincinnati

The Norfolk & Western on December 1 opened at Cincinnati, Ohio, a new coal bureau, the sixth established by this road since 1929 at stragetic points throughout the country. Other such bureaus are in operation at Chicago, Detroit, Mich., Boston, Mass., and Winston-Salem, N. C. L. J. Whitlock, Jr., formerly fuel inspector of the Norfolk & Western, has been appointed district manager of the new Cincinnati bureau. Mr. Whitlock's duties, the announcement said, will be to "form contracts with coal receivers and consumers in the Cincinnati district and render all possible aid in the expeditious movement of coal to that territory. He will also lend his aid to, and co-operate with, producers of 'Fuel Satisfaction' located on the railway, and to sales agencies in securing new coal business."

## New Secretary for A. S. M. E.

Clarence E. Davies, executive secretary of the American Society of Mechanical Engineers, has been elected secretary of that organization to succeed the late Calvin W. Rice.

Mr. Davies was born in Utica, N. Y., and was graduated from the Rensselaer Polytechnic Institute in 1910. He was employed in the production department of the Smith Premier Works, Syracuse, N. Y., of the Remington Typewriter Company, and during the war was first lieutenant and, later, captain in the Ordnance Department, U. S. Army. He now holds the rank of lieutenant colonel in the Ordnance Reserve Corps.

He first became associated with the American Society of Mechanical Engineers in 1920, as associate editor, and after various promotions was made executive secretary in 1931.

## Pennsylvania to Establish New Florida Train

The Pennsylvania, on January 2, will place a new train, the Florida Arrow, in service between Chicago and Florida. The train will make southbound trips on Mondays, Wednesdays and Saturdays and Northbound on Mondays, Wednesdays and Fridays. It will be run by way of Indianapolis, Ind., Louisville, Ky., Birmingham, Ala., and Montgomery, leaving Chicago at 6 p. m. (central time) and arriving at Jacksonville, Fla., at 10:10 p. m. (eastern time) the next day. It will arrive in St. Petersburg at 7:15 a. m. and in Miami at 8:50 a. m. It will leave Miami and St. Petersburg at 9:30 p. m. (eastern time) and Jacksonville at 8 a. m. and will arrive in Chicago at 10 a. m. (central time).

## Power Reverse Gear Case Argued in Supreme Court

Oral arguments were heard by the Supreme Court of the United States on December 12 and 13 on the appeal of the government from the decision of three federal judges at Cleveland, Ohio, on November 24, 1933, setting aside the order of the Interstate Commerce Commission requiring the railways to instal power reverse gears on locomotives. Arguments were presented by Daniel W. Knowlton, chief counsel of the commission, Jacob Aronson, vice-president of the New York Central, Nye F. Morehouse, assistant general solicitor of the Chicago & North Western, and H. N. McLaughlin, representing the locomotive engineers' and firemen's brotherhoods.

## Holiday Fares in East

Eastern railroads generally are extending their round-trip week-end fares to cover the Christmas and New Year holidays. These round-trip tickets, at 1⅓ times the one-way rate, are being sold by Eastern roads, other than those in New England, from December 20 to December 25 and from December 28 to January 1, both with a return limit of January 10; round-trip Pullman rates, at 1½ times one-way Pullman charges, will be available in connection therewith.

The New York, New Haven & Hartford is also extending its regular week-end rates to cover the holidays. These New Haven tickets will be sold from December 21 to December 25 with a return limit of December 26 and from December 28 to January 1 with a return limit of January 2.

## Central Railway Club of Buffalo Annual Dinner

The forty-sixth annual dinner of the Central Railway Club of Buffalo will be held on Thursday, January 10, 1935, at the Hotel Statler, Buffalo, N. Y. The usual "Central Railway Club of Buffalo Special" will carry a New York City delegation to the dinner, and will this year be operated by the New York Central. Special low round-trip fares will be available to those traveling on this train, which will leave Grand Central Terminal, New York, on Wednesday, January 9, at 6:30 p.m. and arrive at Buffalo Thursday morning. F. E. Williamson, president of the New York Central, will deliver the principal address at the dinner. C. C. Fletcher of the New York Central is chairman of the New York delegation committee.

## Ashburn Favors Waterway Regulation

In an address at Cincinnati on December 11, General T. Q. Ashburn, president of the Inland Waterways Corporation, said he favored regulation of water carriers and motor carriers, as well as of railroads, but on condition that the interstate commerce law be amended so that the Interstate Commerce Commission will have a mandate from Congress that will place upon it "the duty of protecting and treating alike all different forms of transportation, and of regulating such a transportation system primarily for the benefit of the public." He also said that the creation of a cabinet position, to be known as the Secretary of Transportation, who would be responsible for the development and effectuation of this policy, might be offered as an alternative solution. He said he agreed with Co-ordinator Eastman that "unregulated competition may be quite as much of a public evil as unregulated monopoly."

## Electric Track Watchman on the Pennsylvania

The long high wire fence shown in the accompanying illustration is not, properly, a fence, but rather an electrically connected warning device and partial barrier erected as a defense against possible rock falls from the high ledge behind it. The wire fencing is not expected to stop any major rock falls, but rather to detect any falls which might in any way endanger safe operation, and to give a positive danger warning to trains.

In effecting this latter function, any falls which cause any material disturbance of the fence mesh operate one or more circuit breakers placed in boxes on the wire supporting poles as shown in the illustration. This, in turn, causes the operation of electrical relays, which sets at "Stop" the automatic roadside block signals governing the section of track which may be endangered.

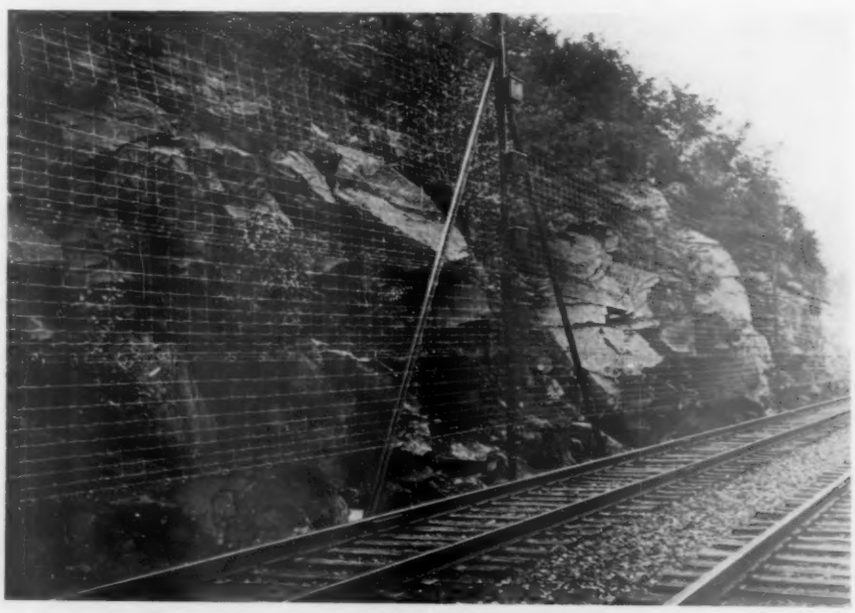
The "fence" shown, which is located near Elizabethtown, Pa., 17 miles east of Harrisburg, on the main line, is more than 1,000 ft. long and rises to a maximum height of 40 ft. This is only one of a number of more or less similar installations which have been made on the Pennsylvania to eliminate a possible hazard to train operation.

## Complaint Against Store-Door Service Dismissed

The Interstate Commerce Commission, Division 4, has dismissed a complaint filed by the Motor Truck Club of Massachusetts, Inc., against the rates and charges of the Boston & Maine Transportation Company for transportation including store-door pick-up and delivery service. The report points out that a number of times in recent years the commission has expressed its approval of experiments being made in the use of motor trucks and busses to supplement or in substitution for railroad service and says that the testimony of witnesses for a large portion of the shipping public using the service is that it is necessary and desirable in the public interest. "We believe", the report says, "that defendant should not be hampered in continuing the service in the absence of a clear showing that some provision of the law which we administer is being violated. Upon this record no such a showing has been made."

## Southern Low Fares Launched for New Experimental Period

The Southern has issued several attractive passenger traffic advertising posters and handbills to continue the aggressive merchandising of its low fares which were recently extended for the additional ex-



This High Fence on the Pennsylvania Near Elizabethtown, Pa., Warns of Rock Falls Which Might Endanger Train Operation

perimental period ending September 30, 1935. The 1.5-cent-per-mile coach rate is given the limelight on this advertising material wherein prospective patrons are reminded that at this low charge they may "travel anywhere—any day on the Southern." Other Southern low rates, all applicable for Pullman travel without surcharge, are: The 2-cents-per-mile round-trip 15-day rate, the 2.5-cents-per-mile round-trip six-months' rate, and the 3-cents-per-mile one-way rate.

The availability of these fares for Christmas travel has prompted the Southern to issue appropriate circulars in this connection. One of the Christmas circulars features a picture of Santa Claus riding the observation platform of a "Southern Santa Special," along with a listing of the low fares quoted in the foregoing. Southern passenger traffic officers find all indications pointing to heavy Christmas travel, and add that the low fares are proving highly successful in accounting for substantial increases in passenger revenue.

## P. R. R. Telegraphers Form System Board of Adjustment

Pennsylvania telegraphers, represented by the Association of Telegraph Department Employees, Pennsylvania System, have formed with the management a System Board of Adjustment to settle differences arising between the company and various groups of telegraph department men. The Telegraphers' Board of Adjustment is the fourth of its kind to be established on the Pennsylvania. Boards already formed have jurisdiction over men in the engine and train service, the maintenance of way and shopcraft departments. Altogether, 76,000 men, or almost three-quarters of the railroad's working forces, are represented in the jurisdiction of the four Boards of Adjustment.

This latest agreement also provides machinery for the local adjustment of disputes by divisional and regional handling between representatives of the management and of the men. In the event that settlements cannot be made locally, disputes are referred to the System Board of Adjustment. The authority of this board is final and no appeal can be taken from its decision. The boards of adjustment have been formed under the amendments made to the Railway Labor Act at the last Congress. Management and men will be equally represented on the Telegraphers' Board and will have equal voting power. Not less than a two-thirds vote will be necessary to reach a decision.

## Commerce Department to Study Truck Transport in Alabama

Continuing a research study started by the Transportation Division, Bureau of Foreign and Domestic Commerce, in 1931, which was designed to record the development of motor truck freight transportation in the United States, a comprehensive study of motor truck transportation in Alabama to determine the position of this transportation agency in the industrial life of the state will be started immediately, Claudius T. Murchison, Director of the Bureau, has announced. C. P. Persons, special representative of the Transportation Division, has been designated to supervise the study. He will leave for Alabama immediately and will establish headquarters in the local district office of the bureau at Birmingham.

The study, it was stated, is being undertaken at this time in recognition of the influence of transportation in the development of the Birmingham industrial area and the even greater service which it will be called upon to perform as a result of the Tennessee Valley development. The initial phase of the study will include a detailed survey of all regularly operated motor truck lines in the state. It is planned that the results will show the types of vehicles operated, classes of commodities carried, radius of operation and the cost of operation for trucks engaged in both intra-state and inter-state service. It is expected that a preliminary report will be available by the end of the current fiscal year.

## Tax Deductions Disallowed

At various dates between 1913 and 1916, the Meridian & Memphis sold its thirty-year 5 per cent gold bonds at a discount. During 1924 to 1926, inclusive, while the Gulf, Mobile & Northern was the owner and holder of the entire bond issue, it joined with the Meridian & Memphis in filing consolidated income tax returns as affiliated corporations. In each year the latter deducted from gross income the amortized bond discount. The deductions were disallowed by the Commissioner of Internal Revenue. His action was sustained by the Board of Tax Appeals, 22 B. T. A. 233, and by the Court of Appeals for the District of Columbia. 71 F. (2d.) 953.

This judgment the United States Supreme Court has now affirmed. Gulf, Mobile & Northern v. Helvering. Decided Dec. 3, 1934. Opinion by Mr. Justice Stone. Mr. Justice Butler and Mr. Justice Roberts thought the judgment should be reversed.

The reason for the decision is contained in the companion case of Old Mission Portland Cement Co. v. Helvering, decided at the same time, where the court said: "A single taxpayer who had purchased his own bonds before maturity could not afterwards deduct, from gross income, the amortized discount on the bonds, in anticipation of their payment at maturity.

"This is equally the case where the obligor and obligee are affiliated corporations claiming the benefit of a statute which permits them to compute their tax as though they were one. * * *

"Having elected to take the benefit of affiliation, the taxpayer cannot complain of a burden which is inseparable from the benefit and which finds its source in the very method of computing the tax from which the benefit is derived."

## Streamlined Train in Operation on South Manchurian Railway

A new high-speed streamlined train, known as "Asia" has recently been placed in operation by the South Manchuria Railway, according to a report from Dairen, made public by the U. S. Commerce Department. The northbound train departs from Dairen at 9 a.m. and arrives at Hsinching at 5:30 p.m.; the southbound train leaves Hsinching at 10 a.m. and arrives at Dairen at 6:30 p.m. Each train makes only three stops en route.

Prior to the inauguration of the "Asia," the report points out, the fastest train operated by the South Manchuria was the "Hato," covering the distance from Dairen to Hsinching of approximately 435 mi. in 10½ hrs. The "Asia" reduces the time to 8½ hrs. The average speed of the train is slightly over 50 m.p.h., although the locomotive is capable of developing a speed of 80 m.p.h.

Next year, the report states, the railway plans to substitute heavier rails for those now in use and adopt the stagger system for rail joints in place of the parallel system at present employed. The trains will then be operated at a greater speed and the time between Dairen and Hsinching will be further reduced by an hour or more.

The coaches and locomotives of the new train were built in the South Manchuria shops, the materials used being largely of Japanese and Manchurian origin. Additional coaches and locomotives are now being built in the same shops, and eight locomotives of a similar design have been ordered from Japan, the report shows.

## Canada's Politicians Jumpy on Amalgamation Issue

An indication of the tenseness of mental condition these days is found in the spasmodic outbreaks in Canada of discussions about railway amalgamation. The people are jumpy but the political parties are even more jumpy. So long as the heads of the two roads, E. W. Beatty of the Canadian Pacific and C. P. Fullerton of the Canadian National, kept the fight to themselves little attention was given to it but when prominent party men, including Hon. William D. Euler, who is likely to be the next Liberal Minister of Railways, if the Liberals win the coming election, started to talk about amalgamation under public control and Mr. Beatty commended Mr. Euler for getting the question out into the light of party discussion public ownership advocates in Ontario and private ownership defenders in Quebec got excited.

Last week at the National Liberal convention held in Ottawa Mr. Euler repeated his plan, as outlined in the speech at Chatham in Western Ontario a few days previously. It received little commendation from the delegates to the convention and the leader of the Liberal party, Mr. Mackenzie King, hastened to reassure Ontario and Western Canada that the Liberal party would stand by his policy as stated in the House of Commons last session to the effect that they would fight to preserve the integrity of the Canadian National as a publicly-owned system. Then the Conservatives unofficially let it be known they were standing by Premier Bennett's slogan, framed in 1930, of "amalgamation never, competition ever."

The controversy was fanned again last week by Hon. Robert J. Manion, Minister of Railways in the present Cabinet, speaking at a Conservative gathering at Smiths Falls, in Eastern Ontario. Dr. Manion took pains to reassure the public that the present Government never favored amalgamation. After a few years of the joint operation proposed by Mr. Euler, the minister said, "you could not separate the

two railways any more than you can unscramble an omelet."

"I should like to know where Mr. Mackenzie King stands on this proposal," he added. "His statement that the Liberal party 'stands for the maintenance of the integrity of the Canadian National' is not a reply at all, as you could have unification or amalgamation under Government control inside the four corners of that reply."

## Five Thousand Fogmen on Call

The Great Western Railway of England, announcing that its passenger cars have been overhauled so as to be thoroughly prepared to provide suitable light and heat in cold weather, says that the movement of its trains in the winter season is safeguarded by an army of 5,000 selected men—track repairmen—prepared at all times to put torpedoes on the track to reinforce the block signals when, because of fog, the engineman cannot get satisfactory views of the roadside semaphore and light signals. These fogmen, a time-honored feature of English railroad service, live near their posts of duty, and take up their positions at the signals on their own initiative, when necessary; and, of course, the signalmen in the signal cabins have means for calling the men out whenever their services are required.

The Great Western operates 3,801 miles of road and, although its territory is favored with a generally mild climate, snow plows are kept ready for service at 32 different places on the lines.

The foregoing refers to the company's lines as a whole; but on 2,130 miles the company has in operation the well-known Great Western system of automatic train control, with cab signals.

On the lines of dense traffic, in or near London, there is a special fog-service timetable which can be substituted for the regular schedules when fog is so dense as to cause serious delays.

Lines remote from London are not so frequently troubled with fog and, at one place, Barmouth Junction, the fog signalmen have not been called out for duty for nearly 40 years.

## Waterway Improvement Projects

The War Department has studies and reports setting up some 1,600 projects for waterway improvements, with an estimated construction cost of $8,000,000,000, according to the annual report of Secretary of War Dern. In many cases, he said, the question must be answered whether the federal government should finance them in whole, in part, or not at all. The Public Works Administration has allotted to the works of river and harbor improvements and flood control a total of $343,274,752, to be applied on 126 projects, and total expenditures during the fiscal year 1934 on all civil works of the Corps of Engineers, under the P. W. A. program and under appropriations by Congress, amounted to $153,149,798. Conspicuous among the civil works activities of the War Department is the grand plan for improving inland waterways and bringing to the interior of the continent "the benefit of cheap water transportation." The principal features of that program, as now set up, are the following:

(1) To improve the navigability of the Mississippi river for modern barge transportation from its mouth to St. Paul and Minneapolis, Minn.

(2) To improve the navigability of the Missouri river for barges from its mouth to Sioux City, Iowa.

(3) To improve further the barge navigability of the Illinois waterway, which constitutes part of the Lakes-to-the-Gulf waterway.

(4) To improve the Great Lakes-St. Lawrence seaway for the purpose of bringing ocean-going ships to Great Lakes ports.

"When this vast program shall have been completed," the report says, "it will give the United States the most magnificent system of improved inland waterways in the world. It is confidently expected that the resultant cheap water transportation will not only reduce freight rates on farm products but will encourage industry to locate in the midst of agriculture, to the advantage of both."

## A.A.R. Making Special Check of Car Movements

Railroads of the United States have been making the most wide-spread and detailed check ever undertaken of the actual daily use of the two million freight cars in the country, according to an announcement by J. J. Pelley, president of the Association of American Railroads. This first nation-wide record of how cars move, and why, is made under the direction of the association in order to discover what improvements, if any, can be made in the present system of handling freight cars, in connection with the study the association is making of the car pooling plan proposed by the co-ordinator's organization.

Every movement of each freight car is being recorded for a two weeks period by men in a position to know the facts of each particular movement, from reports of freight conductors, local station agents, yard masters and clerks, car distributors and dispatchers. These individual records, which will present a far more complete picture than routine statistical reports of car mileage, loaded and empty, are being put together by each railroad, and will be reported to the Association of American Railroads. There the combined picture will be analyzed to determine how to get the fullest and most economical use out of cars without impairing the present high standard of service.

In the ordinary course of business, it was explained, more freight cars move into the densely populated Eastern section than move out. "To avoid congestion in the East and car shortage in the West and South, there must be a large return movement of these cars without loads. Return of coal cars to the mines, of tank cars to the refineries, of refrigerator cars to the sections which produce perishable products, and similar uses of special equipment force railroads to haul many cars empty. Often it is necessary to move an empty car to have the sort of car wanted by a shipper when and where he wants it; or to concentrate large numbers of empty cars to protect special heavy crop or other movements; or to move surplus empty cars to places of storage near the locations where they will eventually be required.

"All such movements appear in the regular statistical reports simply as hauling empty cars without the necessary reason for their movement empty being apparent. They may even appear as a cross-haul, with empty cars going in both directions on the same division at the same time, in the large number of cases where empty cars are distributed for loading from both ends of a division toward the middle."

Freight cars have been classified in this check-up by their ownership, and by types such as box, refrigerator, open-top, flat, stock, tank and other sorts of cars. With the complete history of the daily movements of each of these sorts of cars, and the reasons for each such movement, the railroads will get beyond bare statistics to a knowledge of the facts of car utilization never before available.

## Pennsylvania P. W. A. Loan Has Widespread Effect

Completion by the Pennsylvania of the last of 7,000 freight cars that it has built as a part of the federal public works program to create employment brought a preliminary report from the Bureau of Labor Statistics of the Department of Labor to Public Works Administrator Harold L. Ickes showing the far-flung regenerative effect of one part of the largest non-federal construction project to be completed to date.

The Public Works Administration loaned $80,650,000 to the Pennsylvania less than a year ago to carry forward the greatest single private construction program in the country. Of this, $17,000,000 was for the 7,000 freight cars that have been completed, $45,000,000 was for electrification work now nearing completion, $15,000,000 was for 100 electric locomotives now under construction and $3,650,000 was for manufacture of 100,000 tons of new rails which were made this summer.

The report from the Bureau of Labor Statistics shows that the Pennsylvania construction program has been of tremendous benefit to the heavy industries, where unemployment was most acute.

Work on the completed freight cars was commenced in February and by May the Pennsylvania had called 3,500 of its furloughed shopmen back to work in its car shops at Altoona, Pa., Harrisburg and Pittsburgh, and many more thousands of men had been called back to work by industries in other localities which have produced more than $12,000,000 worth of materials that have been used.

Up to November 15, the latest date for which information was available for the preliminary report made by the Bureau of Labor Statistics, the railroad shopmen called back to work had been paid $1,534,364 in wages and $12,143,177 had been spent for materials. It is estimated that at least 80 per cent of the money spent for materials went into the pockets of men employed in producing and transporting them. Steel and iron led the list of materials purchased, orders being placed for $11,225,000 worth of parts and equipment manufactured from steel and iron. More than $650,000 worth of lumber was purchased. Paint orders totalled $650,000. More than $8,000 worth of cotton waste was used by

mechanics, principally for hand wiping and cleaning.

The following table shows, by types of materials, the value of materials purchased by the Pennsylvania up to November 15:

| | |
|---|---|
| Bolts, nuts, washers, etc. | $254,470 |
| Cast-iron pipe and fittings | 14,044 |
| Cement | 1,253 |
| Chemicals | 122 |
| Copper products | 5 |
| Cork products | 1,761 |
| Metal doors, etc. | 269,339 |
| Engines, tractors, etc. | 480 |
| Felt goods | 2,182 |
| Forgings, iron and steel | 9,158 |
| Foundry and machine shop products not elsewhere classified | 6,429,382 |
| Hardware, miscellaneous | 691 |
| Lumber and timber products | 653,393 |
| Nails and spikes | 3,169 |
| Paints and varnishes | 159,770 |
| Paper products | 253 |
| Petroleum products | 5,936 |
| Planing mill products | 62,952 |
| Plumbing supplies | 5 |
| Roofing, built-up and roll; asphalt, shingles, roof coating other than paint | 4,673 |
| Sheet metal work | 316,493 |
| Springs, steel | 399,821 |
| Steam and hot water heating apparatus | 6 |
| Steam and other packing, pipe and boiler coverings and gaskets | 26 |
| Steelworks and rolling mill products, including structural and ornamental metal work | 3,503,976 |
| Tools, other than machine tools | 17,859 |
| Waste | 8,370 |
| Wire drawn from purchased rods | 6,702 |
| Wirework, not elsewhere classified | 77 |
| Miscellaneous | 16,809 |
| TOTAL | $12,143,177 |

## Accounting Officers' Association Merged With A. A. R.

Under the plan of organization of the Association of American Railroads the Railway Accounting Officers' Association was merged, together with other associations, into the new organization. The officers and employees of the accounting officers' association were authorized to continue to discharge their existing duties until otherwise directed by the president of the association.

On December 8, J. J. Pelley, president of the A. A. R., notified the president of the accounting officers' Association that it would cease to function as an independent body on and after December 15 and on December 14 the executive committee of the Railway Accounting Officers' Association met to close up its affairs. The funds, records, files, correspondence and property of the association have been turned over to the new organization and its affairs have been liquidated.

E. H. Bunnell, vice-president of the Finance, Accounting, Taxation and Valuation Department of the A. A. R., has appointed F. J. Fell, Jr., vice-president of the Pennsylvania, T. F. Darden, vice-president of the Atlantic Coast Line, and H. W. Johnson, comptroller of the Chicago, Burlington & Quincy, as a special committee to formulate a method of procedure for conducting the affairs of the Accounting Division of the department, the executive committee of the accounting association has been appointed to act temporarily as an advisory committee, and the committees of the accounting association are to function until further notice in the same capacity as before as committees of the Accounting Division. The mandatory rules and rules covering arbitration of the former association will continue in full force and effect until further notice.

E. R. Woodson, who has been secretary of the Railway Accounting Officers' Association, has been appointed assistant to Vice-President Bunnell, to handle general and statistical matters as may be specifically assigned; E. A. Reynolds has been appointed revenue accounts assistant; A. F. Free has been appointed disbursements accounts assistant, and E. R. Ford has been appointed secretary and office manager of the department. Mr. Woodson will continue to act as chairman of the Joint Committee of Traffic Executives and Accounting Officers and will be assisted by Mr. Reynolds.

Robert S. Henry, assistant to the vice-president of the Nashville, Chattanooga & St. Louis, has been appointed assistant to the president of the Association of American Railroads. J. G. Kerr, assistant to the traffic vice-president of the Louisville & Nashville, has been appointed southern assistant to the vice-president in charge of the Traffic Department of the A. A. R. George B. Elliott, president of the Atlantic Coast Line, has been elected a director of the association succeeding W. R. Cole, deceased.

## Approve Export and Import Rates for Southern Ports

(*Continued from page 836*)

tory. At present, except for Cuban traffic, the bulk of it moves via the north Atlantic ports, principally New York, but the movement via the southern ports, particularly New Orleans, is nevertheless substantial. Each group of carriers desires to retain the traffic which it now enjoys and ultimately to secure more.

"The act recognizes the right of competing carriers to adjust their rates, subject to the requirement that such rates be reasonable, nondiscriminatory, and nonprejudicial, so as to retain or to increase the amount of the competitive traffic handled by them. The disadvantages of the southern routes have been considered as explanatory of the admittedly low level of rates proposed by the southern lines. The motion of the eastern lines to strike from the record the evidence with respect to those disadvantages is denied.

"It is not contended by any one that the rates advocated by the southern lines are unreasonably high or that they would violate section 2 of the act. The first question presented is whether those rates are unreasonably low.

"Over selected routes between representative points and the various southern ports, the ton-mile earnings produced by the class rates and the car-mile and ton-mile earnings produced by the commodity rates advocated by the southern lines are, with comparatively few exceptions, in excess of the average out-of-pocket cost of handling added traffic in added trains as determined by the study previously referred to. That cost study finds considerable support in the facts that the export and import traffic now handled by the southern lines from and to the interior territory constitutes a relatively small part of their total traffic, and that the minimum hauls on the considered traffic are largely over main lines and are considerably greater than the average hauls on which the study is based. Considered in connection with other evidence of record it indicates that the vast majority of the proposed rates would result in gain rather than loss to the southern lines. The proposed rates with respect to which doubt exists as to their profitableness to the southern lines are generally commodity rates which would apply on trans-Atlantic traffic. There are, however, some proposed rates on other than trans-Atlantic traffic, principally on comparatively low-grade articles, with respect to which doubt also exists. The minimum earnings limitations hereinafter prescribed will, in our opinion, insure that all rates with respect to which doubt exists are profitable and that none will impose a burden upon other traffic.

"The effect which the rates advocated by the southern lines would have on the rate structure and on the movement of traffic cannot, of course, be determined with exactness. The evidence leaves no doubt, however, that with respect to trans-Atlantic traffic the southern routes are generally at a disadvantage compared with the northern routes. Differentials under the rates over the northern routes are necessary to permit the southern routes to participate in the movement of this traffic. We cannot foresee whether the eastern lines would attempt to make effctive any general reductions in the rates over the northern routes should the rates advocated by the southern lines become effective. The evidence is not persuasive that those rates would cause any substantial diversion to the southern routes of traffic now moving over the northern routes. In view of the present volume of movement over the northern routes, general reductions would not be expected."

Commissioner Mahaffie, dissenting, said:

"If, as is contended by the southern lines, the relief granted in the *Fourth Section Case*, 169 I. C. C. 13, is inadequate, the proper course would be to reopen it and to make such changes as are warranted. By attempting to avoid the necessity of relief from the fourth section the carriers are unnecessarily cutting rates to and from intermediate and noncompetitive points. Such rate cutting results in losses of revenue with no compensating increase in traffic. Export and import rates lower than domestic rates between the same points can be justified only on the theory that they are necessary to move the traffic. As to many here approved, no such justification exists.

"In my judgment the majority err in approving lower rates from more distant points on like traffic dependent on the final destination in foreign countries. The transportation, insofar as it is subject to our jurisdiction, is from the origin to the port. The carriers over which we have jurisdiction end there. To that point the traffic is that described in section 4. The fact that ships later take the traffic to different foreign countries does not justify a higher rate to the port from a less distant, than from a more distant, origin on the same line of railroad."

Commissioners Aitchison and Porter did not participate in the disposition of the cases.

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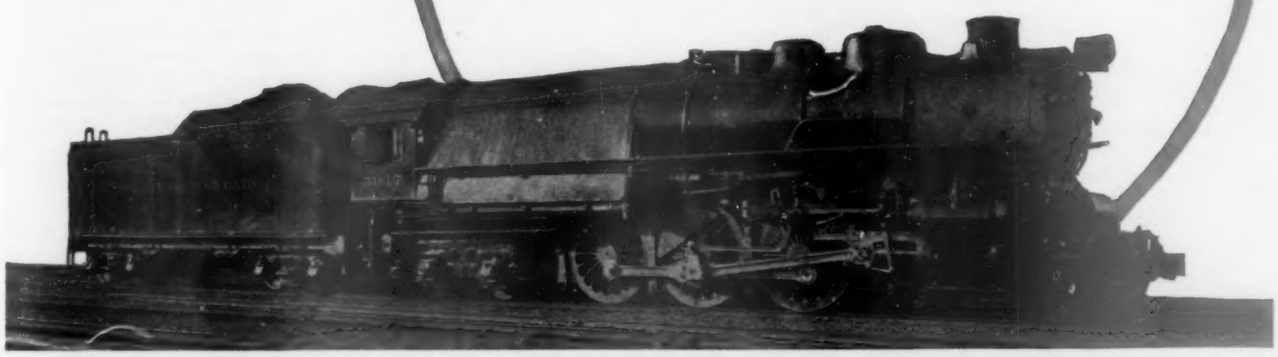
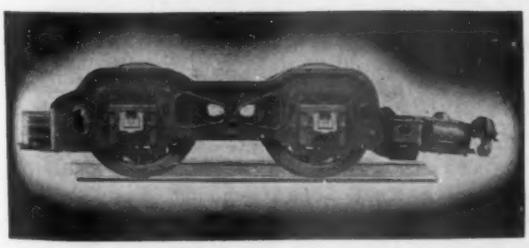
# THE BOOSTER *is an Invaluable AND Integral Part of the Locomotive*



The higher the efficiency with which a locomotive operates over a division the greater the return on the investment and the greater the net earnings.

Booster-equipped, to aid in starting, accelerating and over the ruling grades, the locomotive can produce more ton-miles-per-hour, or, a smaller locomotive can produce the same ton-miles-per-hour.

This permits operating the locomotive at more nearly its maximum efficiency a greater part of the time than would be possible if the maximum demand for power had to be provided by the two larger main cylinders.



In the design of new locomotives the Booster is as essentially an integral part of the locomotive as the main cylinders and driving wheels.

By incorporating the Booster in the original design it permits of a lighter, lower cost locomotive that will be more economical both to operate and to maintain.

*No locomotive device is better than the replacement part used for maintenance. Genuine Franklin repair parts assure accuracy of fit and reliability of performance.*

**FRANKLIN RAILWAY SUPPLY COMPANY, INC.**

NEW YORK CHICAGO MONTREAL

# Construction

DELAWARE, LACKAWANNA & WESTERN.—The elimination of the grade crossing of this road on the Pavilion-Canawaugus highway about 1.5 miles northwest of Linwood, N. Y., has been ordered by the New York Public Service Commission. The commission directed that the crossing be eliminated by placing the grade of the highway above the grade of the railroad at the existing location at an estimated cost of $151,100.

ERIE.—Three crossings of this road near Howells station in the Town of Wallkill, N. Y., have been ordered eliminated by the New York Public Service Commission. The crossings are to be eliminated by closing the highways across the right of way of the railroad and diverting traffic to a new undercrossing; traffic is to be diverted by means of new highways.

GOLD COAST.—On behalf of a company to be organized in Oregon, Gilbert E. Gable, of Port Orford, Ore., has applied to the Interstate Commerce Commission for a certificate authorizing the construction of a railroad from Port Orford, Ore., to Leland, 90 miles, with 5 miles of sidings and a dock and terminal at Port Orford, which it is hoped may be financed by a loan from the Reconstruction Finance Corporation.

NEW YORK CENTRAL.—Plans and specifications for the construction of signal station No. 2 at Syracuse Junction, N. Y., in connection with the elimination of this road's grade crossings in Syracuse have been approved by the New York Public Service Commission. A low bid of $22,036 for the construction of the station submitted by William M. Ballard, Inc., Syracuse, was approved and the commission directed that the contract be awarded and work begun as soon as practicable.

# Equipment and Supplies

### Locomotive Statistics for 1933

Wage-earner employment in the construction of steam and internal-combustion locomotives in the United States increased in the summer and fall of 1933, according to a preliminary report compiled from data collected in the Biennial Census of Manufactures taken in 1934, released by Director William L. Austin, Bureau of the Census, Department of Commerce. This report shows 2,084 wage earners on the pay rolls in March, 2,083 in June, 2,641 in September, and 2,827 in December.

The total value of steam and internal-combustion locomotives and parts made in 1933 by establishments engaged primarily in the construction of such locomotives amounted to $2,827,931, as against $13,763,130 reported for 1931 (the last preceding census year) and $70,961,472 for 1929. In order to avoid disclosing approximations of the data reported by individual establishments, the figures for numbers and values of standard-gage and of mining and industrial locomotives built in 1933 were withheld from publication.

Statistics for 1933, with comparative figures for earlier years, are given in the accompanying tables. All figures for 1933 are preliminary and subject to revision.

TABLE 1.—SUMMARY FOR THE INDUSTRY: 1933, 1931, AND 1929,

| | 1933 | 1931 | 1929 |
|---|---|---|---|
| Number of establishments | 13 | 16 | 16 |
| Wage earners (average for the year) | 2,374 | 5,443 | 11,045 |
| Wages | $1,862,529 | $5,589,610 | $17,994,078 |
| Cost of materials, fuel, and purchased electric energy | $4,266,218 | $14,870,591 | $52,808,092 |
| Products, total value | $6,927,300 | $22,118,636 | $83,858,258 |
| Locomotives (other than electric) and parts | $2,827,931 | $13,763,130 | $70,961,472 |
| Other products (not normally belonging to the industry) | $2,164,809 | $6,349,851 | $8,804,961 |
| Receipts for contract and repair work | $1,934,560 | $2,005,655 | $4,091,825 |
| Value added by manufacture | $2,661,082 | $7,248,045 | $31,050,166 |

TABLE 2.—WAGE EARNERS, BY QUARTERS: 1933 AND 1931

(The figure given for the final month of each quarter is the total number of wage earners on the pay rolls for the week including the fifteenth day of the month, or for some other representative week in the month.)

| Census year | March | June | September | December |
|---|---|---|---|---|
| 1933..... | 2,084 | 2,083 | 2,641 | 2,827 |
| 1931..... | 6,603 | 5,691 | 4,962 | 3,875 |

## LOCOMOTIVES

THE SEABOARD AIR LINE is inquiring for three locomotive tenders of 16,000 gallons capacity.

## PASSENGER CARS

THE KEY SYSTEM, LTD., is inquiring for from 10 to 25 two-car, three-truck, four-motor, light-weight steel articulated units. These cars are for service on the new San Francisco, Cal.-Oakland bridge.

## FREIGHT CARS

THE LIQUID CARBONIC CORPORATION is inquiring for five steel-sheathed box cars of 40 tons' capacity.

THE BESSEMER & LAKE ERIE has ordered 100 light-weight Cor-Ten steel hopper cars of 69.5 tons capacity from the Pressed Steel Car Company. A description of a car of this type was published in the *Railway Age*, November 10, page 573.

THE LEHIGH VALLEY has placed an order with the Bethlehem Steel Company for 250 mill type gondola cars of 70 tons' capacity; 125 of these cars will be equipped with Miner heavy friction draft gears and the other 125, with Duryea cushion underframes. Inquiry for this equipment which is to be financed by a P.W.A. loan was reported in the *Railway Age* of October 27.

## IRON AND STEEL

THE NEW YORK CENTRAL has placed an order with the American Bridge Company for 200 tons of steel for a warehouse on the west side of New York City.

THE ATCHISON, TOPEKA & SANTA FE has ordered 25,883 tons of rails and 10,700 tons of track accessories. Orders for rails were placed as follows: 1,439 tons Illinois Steel Company, 660 tons Inland Steel Company, 917 tons Bethlehem Steel Company and 22,867 tons Colorado Fuel & Iron Company.

## MISCELLANEOUS

THE AMERICAN STEEL FOUNDRIES has received an order from the American Locomotive Company for roller bearing units for two high speed streamlined steam locomotives, being built for the Chicago, Milwaukee, St. Paul & Pacific. All outboard positions under the locomotives and tenders, namely, rear trailer truck and tender trucks, will be equipped with American Steel Foundries units.

THE PENNSYLVANIA has ordered from the Jones-Motrola Sales Company, New York, a total of 174 Jones railway speed indicators reading from 0 to 100 miles per hour, for service on electric locomotives.

# Supply Trade

**Robert Treat Paine, II,** for 40 years a director of the **General Electric Company,** has resigned on account of ill health. Mr. Paine was elected to the board in 1894, two years after the formation of the company.

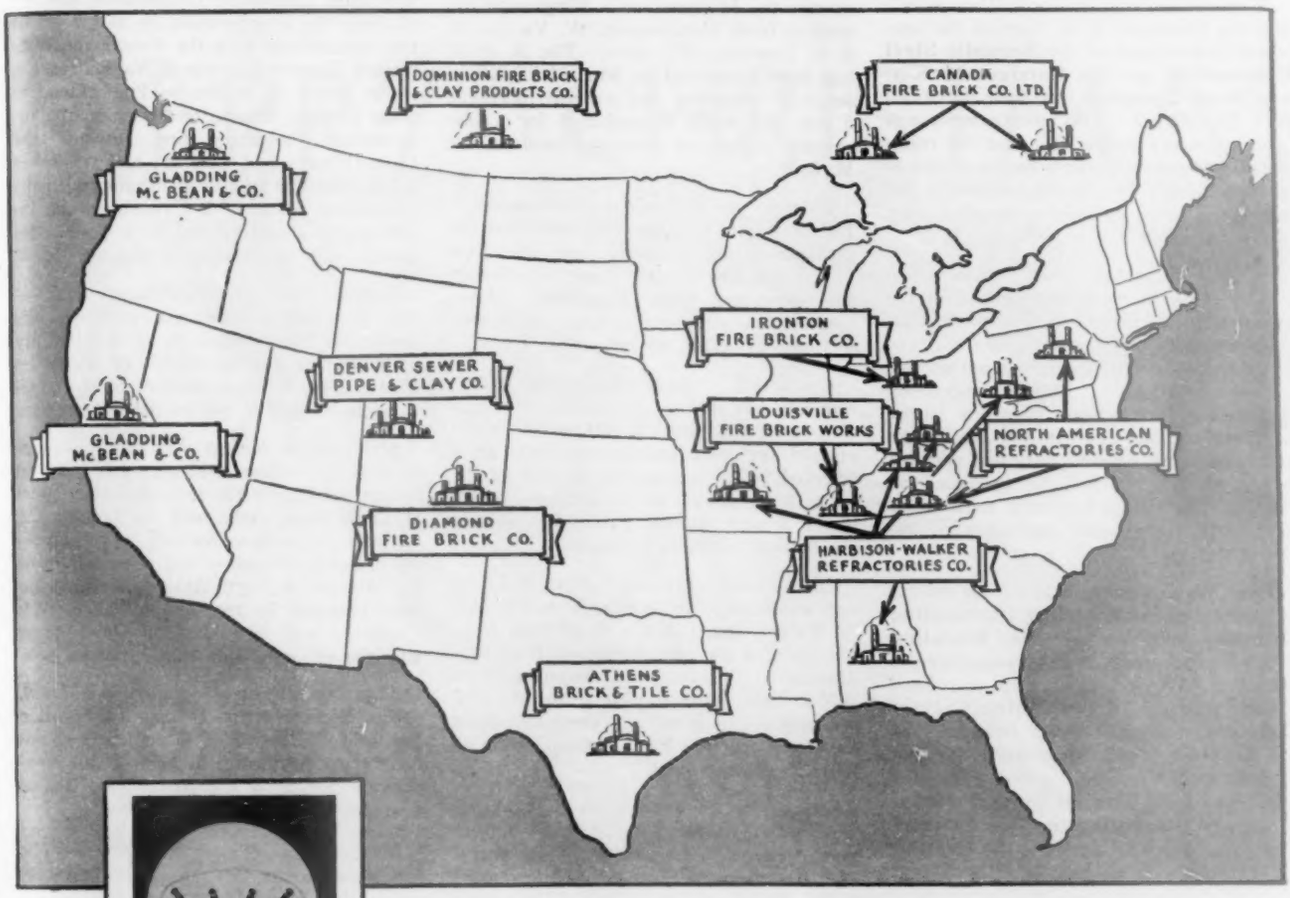
**Eugene G. Grace,** president of the Bethlehem Steel Corporation, has been elected president of the **American Iron & Steel Institute,** New York, succeeding to the position which has been vacant since the resignation in September, 1933, of Robert P. Lamont. **T. M. Girdler,** chairman and president of the Republic Steel Corporation, has been elected a vice-president of the Institute.

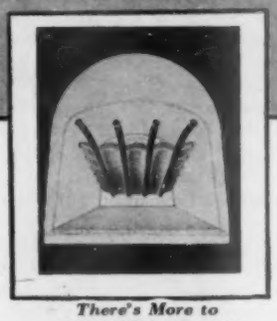
**The Republic Steel Corporation,** Youngstown, Ohio, has appointed the **Buhl Sons Company,** Detroit, Mich.; the **F. W. Heitmann Company,** Houston, Texas, and the **Woodward Company,** Albany, N. Y., warehouse distributors of Enduro stainless steel; and the **Steel Products Company,** McKees Rocks, Pa., has been appointed warehouse distributors of Republic's Toncan iron sheets in the Pittsburgh area.

**The Brown Instrument Company,** Philadelphia, Pa., has been consolidated with the **Minneapolis-Honeywell Regulator Company,** Minneapolis, Minn., and will continue as a separate company with

*Continued on next left-hand page*

# Standardized Service


DOMINION FIRE BRICK & CLAY PRODUCTS CO.
CANADA FIRE BRICK CO. LTD.
GLADDING Mc BEAN & CO.
IRONTON FIRE BRICK CO.
DENVER SEWER PIPE & CLAY CO.
LOUISVILLE FIRE BRICK WORKS
NORTH AMERICAN REFRACTORIES CO.
GLADDING McBEAN & CO.
DIAMOND FIRE BRICK CO.
HARBISON-WALKER REFRACTORIES CO.
ATHENS BRICK & TILE CO.



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SECURITY ARCHES
*Than Just Brick*

NRA MEMBER U.S.
WE DO OUR PART

**In addition to having standardized Locomotive Arch Brick sizes and shapes, so that only a few patterns need be carried in stock, American Arch Company has also standardized arch brick service.**

**American Arch Company arch brick service assures to the railroads:**

1. **The highest quality and uniform quality arch brick on every shipment.**
2. **Adequate stock always available at a plant near the point of delivery.**

**This service is made possible by plants strategically located in every part of the country. These plants are shown above.**

**AMERICAN ARCH COMPANY**
INCORPORATED
***Locomotive Combustion Specialists***
NEW YORK CHICAGO

its existing organization but as a subsidiary of Minneapolis-Honeywell. **Richard P. Brown** will continue as president of The Brown Instrument Company and will become an officer and director of the Minneapolis-Honeywell Company.

A special meeting of stockholders scheduled for December 17 to vote on the proposed consolidation of the **Republic Steel Corporation** and the **Corrigan-McKinney Steel Company** has been postponed until February 5. The postponement was made necessary by the fact that the registration statement covering the securities to be issued under the plan of acquisition and capital readjustment could not be filed prior to November 28.

**A. W. Scarratt,** chief engineer in charge of motor truck engineering for the **International Harvester Company,** Chicago, has been promoted to chief engineer in charge of all the company's automotive engineering activities. Besides supervising engineering developments of motor trucks as heretofore, Mr. Scarratt now has charge of similar work on stationary and portable power plants. He will be succeeded as chief engineer of motor truck engineering by W. D. Reese, who has been his assistant.

**Paul W. Gregory,** head of the culvert department of the **Wheeling Corrugating Company,** division of the **Wheeling Steel Corporation,** with headquarters at Wheeling, W. Va., has been appointed general manager of the **Canton Culvert Company,** Canton, Ohio, a subsidiary of the **Republic Steel Corporation,** to succeed **F. A. Kelly** who has been appointed president of the **Toncan Culvert Manufacturers' Association,** Youngstown, Ohio, and head of the Republic's culvert division.

The **Worthington Pump & Machinery Corporation,** Harrison, N. J., has established a Pacific Coast regional headquarters at Los Angeles, Cal., which will center jurisdiction of the corporation's business in the western territory now included in the Worthington district offices at Seattle, Wash., San Francisco, Cal., Los Angeles and El Paso, Tex. **C. E. Wilson,** vice-president, is in charge of the Pacific Coast division and has moved his office from New York to 510 West Sixth street, Los Angeles.

## TRADE PUBLICATION

RECOMMENDED PRACTICES FOR GAS CUTTING OF STRUCTURAL STEEL.—The Linde Air Products Company, New York, has issued a pocket-size, 16-page booklet bearing this title, which is of particular interest to those who have anything to do with the cutting of structural steel by the oxy-acetylene process. This booklet, for the first time, sets up qualification tests for the pre-determination of good workmanship in cutting structural steel, from the standpoint of both dimensional accuracy and smoothness of cuts. It also includes material in current regulations with regard to the handling and use of oxy-acetylene, as given in the bulletins issued by various prominent regulatory bodies.

# Financial

BALTIMORE & OHIO.—*Acquisition and Securities.*—The Interstate Commerce Commission has authorized this company to acquire the Morgantown & Kingswood extending from Morgantown, W. Va., to M. & K. Junction, 47.9 miles. The B. & O. has been authorized to issue $1,500,000 of series F refunding and general mortgage 5 per cent bonds in exchange for a like amount of the first mortgage bonds of the M. & K.

BOSTON & ALBANY.—*Abandonment.*—The Interstate Commerce Commission has authorized this company and the New York Central to abandon a part of a branch line extending from Bondsville, Mass., northerly to a connection with the Boston & Maine at Athol, 29 miles.

CANADIAN NATIONAL.—*Bonds.*—This company has sold to a syndicate of Canadian bankers an issue of $20,500,000 of 16-year 3 per cent guaranteed bonds at a price of 98.75, representing a cost of 3.1 per cent per annum to the company, which is the lowest interest rate this company has secured since its formation.

CHESAPEAKE & OHIO.—*Equipment Trust.*—A syndicate of 18 banking houses headed by Halsey Stuart & Co. is offering $13,538,000 of 4 per cent equipment trust certificates of this company, maturing from 1936 to 1949, priced to yield from 1.5 to 3.7 per cent. The issue was purchased from the Reconstruction Finance Corporation at 1001.255 per thousand.

CHICAGO, BURLINGTON & QUINCY.—*Dividend.*—The directors of this company have declared a dividend of $1 a share. The company paid $2 earlier in the year.

CHRISTIE & EASTERN.—*Abandonment.*—The Interstate Commerce Commission has authorized this company to abandon as to interstate and foreign commerce its entire line extending from Sandel (formerly Christie), La., to Peason, 11.5 miles.

COOK TRANSIT CORPORATION.—*Stock.*—This company, which operates a 2000-ft. line extending from a connection with the Chicago & Eastern Illinois to the plant of the F. W. Cook Company in Vandenburgh County, Ind., has been authorized by the Interstate Commerce Commission to issue not exceeding 10 shares of common stock without par value to be sold at $100 a share and the proceeds used for working capital.

DENVER & RIO GRANDE WESTERN.—*Interest Payment.*—The directors of this company have authorized payment of $661,600 of interest which was due on October 1 before the 90-day period of grace expires at the end of the year. Issues on which interest will be paid are the Rio Grande & Western first consolidated 4s due 1949, Denver & Rio Grande refunding and improvement 5s due 1978, and Denver & Rio Grande refunding and improvement 6s due 1974.

ERIE.—*R. F. C. Loan.*—Division 4 of the Interstate Commerce Commission has approved a loan of $3,179,000 from the Reconstruction Finance Corporation for a term of not to exceed three years for the payment of taxes and principal payments on equipment trust certificates.

GREAT NORTHERN.—*Abandonment.*—The Interstate Commerce Commission has authorized the abandonment by this road of two connections with the Vancouver, Victoria & Eastern Railway & Navigation Co.—one being a 14.28-mile line extending from Curlew, Wash., to Ferry on the international boundary line between the United States and Canada; and the other a 2.41-mile line from a connection with the Vancouver, Victoria & Eastern on the international boundary line to a point one-quarter mile northwest of Molson, Wash.

LEHIGH VALLEY.—*Equipment Trust.*—The Interstate Commerce Commission has authorized this company to assume liability as guarantor for $3,345,000 of its series V, 1934, 4 per cent equipment trust certificates to be sold at par to the government.

MISSOURI & NORTH ARKANSAS.—*Foreclosure Sale.*—Combined with a hearing on priority of claims, the federal district court at Little Rock, Ark., will, on January 22, consider the petition for sale of the physical property, franchise and other assets of the Missouri & North Arkansas, which has been operated in receivership since 1911. Creditors will be asked to show cause why the proposed sale should not be held.

NORTHERN PACIFIC.—*Equipment Trust.*—The Reconstruction Finance Corporation has sold $1,220,000 of 4 per cent equipment trust certificates of 1934 of this company to Stroud & Co., and F. H. Rollins Company of Philadelphia at 1002.90

PENINSULAR TERMINAL.—*Stock.*—The Interstate Commerce Commission has authorized this company to issue $100,000 of capital stock to be delivered to the Portland Union Stockyards Company in repayment for advances for capital purposes.

PENNSYLVANIA-READING SEASHORE LINES.—*Acquisition and Operation.*—The Interstate Commerce Commission has authorized this company to acquire and operate the Wildwood & Delaware Bay Short Line, extending from Wildwood Junction, N. J., to Wildwood, 4.1 Miles.

PITTSBURG & WEST VIRGINIA.—*R. F. C. Loan.*—This company has applied to the Interstate Commerce Commission for a rehearing on its application for a loan of $500,000 from the Reconstruction Finance Corporation, which the commission recently approved on condition that the loan be guaranteed by the Pennroad Corporation, which holds some 73 per cent of the stock of the P. & W. V. The company said the Pennroad was unwilling to make the guarantee.

SEABOARD AIR LINE.—*Abandonment of Operation.*—The Interstate Commerce Commission has denied the application of the receivers of this company for permission to abandon the operation of the Georgia, Florida & Alabama extending from Richland, Ga., to Carrabelle, Fla., 181 miles, together with a branch line

*Continued on next left-hand page*

MERRY CHRISTMAS

AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET NEW YORK N.Y.

HAPPY NEW YEAR

from Havana, Fla., to Quincy, 11 miles. Under terms of the lease of the G. F. & A. by the S. A. L., the latter company is required to pay annually as rental:

1. 6 per cent interest on $1,750,000 of first and refunding mortgage bonds.
2. 5 per cent on $1,000,000 of first preferred stock.
3. 4 per cent on $500,000 of second preferred stock for 1931, and thereafter 5 per cent.
4. 5.5 per cent on outstanding equipment trust obligations amounting now to $500,000.
5. The corporate expenses of the lessor.
6. Taxes.

The S. A. L. owns all the common stock of the G. F. & A. and formerly controlled it, but the preferred stockholders have now assumed control following discontinuance of interest and dividend payments by the S A. L. The receivers of the G. F. & A., however, have made no demand for the return of the physical property, which remains in control of the S. A. L. receivers. The S. A. L. receivers offered to continue to operate the property for the account of its receivers under specified conditions, but G. F. & A. interests refused the offer. The S. A. L. has been authorized by the Virginia and Florida courts to disaffirm the lease of the G. F. & A., which has been done. The Commission holds that the present application comes "as a result of the failure of the parties to agree on the terms or formula on which the applicants would operate the line. . . .The burden of proof rests upon the applicants. It has not been shown that the operation has resulted or will result in a loss to the applicants. . . .It is clear from the record that the public convenience and necessity represented by the interests of the communities served require the continued operation of the line." Commissioner Mahaffie dissented.

YOSEMITE VALLEY. — *Acquisition.* — The Yosemite Valley Railway has applied to the Interstate Commerce Commission for authority to acquire and operate the property of the Yosemite Valley Railroad pursuant to a plan of reorganization.

### Average Prices of Stocks and of Bonds

| | Dec. 18 | Last week | Last year |
|---|---|---|---|
| Average price of 20 representative railway stocks.. | 36.00 | 36.01 | 38.50 |
| Average price of 20 representative railway bonds.. | 74.68 | 75.08 | 66.96 |

### Dividends Declared

Albany & Susquehanna.—Extra, $1.50, payable January 12 to holders of record December 19.

Beech Creek.—50c, payable January 2 to holders of record December 14.

Chicago, Burlington & Quincy.—$1.00, payable December 26 to holders of record December 19.

Dayton & Michigan.—8 Per cent Preferred, $1.00, quarterly, payable January 2 to holders of record December 15.

Grand Rapids & Indiana.—$2.00, semi-annually, payable December 20 to holders of record December 10.

Joliet & Chicago.—$1.75, quarterly, payable January 7 to holders of record December 21.

Mahoning Coal.—Common, $6.25, quarterly, payable February 1 to holders of record January 15; Preferred, $1.25, semi-annually, payable January 2 to holders of record December 24.

New London Northern.—$2.25, quarterly, payable January 2 to holders of record December 15.

Norwich & Worcester.—7 Per cent Preferred, $2.00, quarterly, payable January 2 to holders of record December 15.

Philadelphia, Baltimore & Washington.—$1.50, semi-annually, payable December 31 to holders of record December 15.

Providence & Worcester.—$2.50, quarterly, payable January 1 to holders of record December 12.

St. Joseph & Grand Island.—Second Preferred, $4.00, payable December 31 to holders of record December 28.

Norfolk & Western.—$2.00, quarterly, payable December 19 to holders of record November 30.

# Railway Officers

## TRAFFIC

**J. C. Weaver,** assistant general live stock agent of the Gulf Coast Lines and the International-Great Northern (units of the Missouri Pacific Lines), has had his headquarters moved from San Antonio, Tex., to Houston.

**I. G. Miller,** general agent, passenger department, on the Missouri Pacific, at Kansas City, Mo., has been appointed to the newly-created position of assistant general passenger agent, with the same headquarters. **F. R. Pennell** has been appointed general agent, passenger department, at Kansas City, to succeed Mr. Miller.

## ENGINEERING AND SIGNALING

**C. J. Voss** has been appointed to the newly-created position of superintendent of bridges and buildings of the Green Bay & Western, with headquarters at Green Bay, Wis.

## OBITUARY

**J. H. Beggs,** purchasing agent of the Chicago & Eastern Illinois, with headquarters at Chicago, died on December 18 of pneumonia.

**C. L. Seagraves,** general colonization agent of the Atchison, Topeka & Santa Fe, with headquarters at Chicago, died on November 27 at Los Angeles, Cal., after 48 years service with this company.

**Frederick H. Owen,** chief of the tariff bureau of the New York Central and its affiliated roads, died suddenly on December 14 of a heart attack at his home in New York.

**Frederick Montmorency,** assistant freight traffic manager of the Chicago, Burlington & Quincy, with headquarters at Chicago, whose death at San Francisco, Cal., on December 4, was reported in the *Railway Age* of December 15, had been connected with the Burlington for 46 years. He was born at Burlington, Iowa, on September 26, 1870, and entered railway service in 1888, as a clerk in the freight claim department of the Burlington & Missouri River of Nebraska (now part of the C. B. & Q.) at Omaha, Neb., where he served in various clerical capacities for the next 10 years. In 1898, he was appointed chief clerk to the division superintendent at McCook, Neb., being transferred to the traffic department two years later as assistant general freight agent at Omaha. After 17 years in the latter position, Mr. Montmorency was promoted to general freight agent with the same headquarters, which position he continued to hold until his promotion to assistant freight traffic manager at Chicago in 1933.

## W. H. Bremner Dies; Was Receiver of Minneapolis & St. Louis

William H. Bremner, receiver of the Minneapolis & St. Louis, died on December 12, as noted in the *Railway Age* of December 15. Death was attributed to a heart attack, which developed after Mr. Bremner had suffered with a severe cold for several days. He was also president and a director in the corporate organization.

William H. Bremner

Mr. Bremner combined a pleasing personality with the force of character of a successful executive. As an engineer as well as a lawyer, he was intimately acquainted with the property and its finances. He was a man of rugged physique and as a student in college was captain of the football team.

Ever since his election to the presidency of the M. & St. L. in 1917, Br. Bremner had headed a line that was subject to such adverse factors that operating skill and intelligent leadership were of little avail in reducing the yearly deficits with which the company was confronted. Following a year in which the company earned only about half of its fixed charges, it was thrown into receivership in 1923, and Mr. Bremner was appointed receiver.

Each succeeding year brought new and more difficult problems. Even before the depression began to take its toll of traffic, other influences were at work and the company suffered heavily from bus and truck competition, gasoline and natural gas pipe lines, crop failures, and diversion of traffic due to other factors. Under Mr. Bremner's direction, desperate efforts were made to reduce expenses and to regain lost traffic. Among other measures, obsolete steam locomotives in passenger service were replaced with 11 gas-electric cars, a considerable number of mechanical coal chutes were constructed to replace more costly units, the increased used of treated ties and tie plates resulted in a substantial reduction in tie renewals, and shop equipment was modernized and the work centralized. That these efforts were rewarded with a measure of success is demonstrated by the fact that, despite lower operating revenues in 1933, the operating ratio drop-

*Continued on next left-hand page*

# TIME WILL TELL

## *—but may tell too late*

TODAY'S mistakes will be shown up by tomorrow's business. But tomorrow may be too late.

As manufacturing or maintenance costs creep up, improvements in methods and in production equipment are not always enough. A re-appraisal of materials may spell the difference between profit or loss for 1935.

Nowhere is this more true than in your choice of steels. Machining costs that are too high may often be reduced by a change in steel specifications without spending a single dollar on new equipment. Breakdowns with consequent high costs for repairs can often be corrected by selecting different steels. Rejections or wastes in production may often be reduced by switching steels or altering heat treatment. A new steel in a given part may increase the quality and reliability of a product at no increase in cost.

Never has judicious selection of the right steel for a job been of greater importance than today. To aid you in that selection, our metallurgists are prepared to analyze your requirements and specify for you the steel which provides the necessary physical requirements at the lowest cost per ton. Their assistance involves no obligation on your part.

U·S STEEL

**Illinois Steel Company**

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SUBSIDIARY OF UNITED STATES STEEL CORPORATION

**ILLINOIS *alloy* STEELS**

ALWAYS DEPENDABLE

ped to 87.87, as compared with 94.79 in 1932.

William Hepburn Bremner was born on October 24, 1869, at Marshalltown, Iowa, and was educated at the University of Iowa, from which he received the degrees of C. E. in 1891, and LL. B. in 1895. His first railway experience was obtained in 1886 as a clerk in the passenger department of the Iowa Central (now part of the M. & St. L.). While studying engineering and for several years following his graduation, Mr. Bremner was connected with the engineering department of the Chicago, Burlington & Quincy. From 1895 to 1909, he engaged in the practice of law at Des Moines, Iowa, being appointed city solicitor there in 1902. At the end of this period Mr. Bremner went with the M. & St. L. as general attorney, being appointed general solicitor in 1913. Three years later he was made general counsel and in 1917 he was elected president and a director. During federal control of the railroads he acted as federal manager of the company, again assuming the presidency in 1920. In 1923 the company was thrown into receivership and Mr. Bremner was appointed receiver. His headquarters were at Minneapolis, Minn.

## Operating Revenues and Operating Expenses of Class I Steam Railways in the United States

Compiled From 147 Monthly Reports of Revenues and Expenses Representing 149 Class I Steam Railways

### FOR THE MONTH OF OCTOBER, 1934 AND 1933

| Item | United States | | Eastern District | | Southern District | | Western District | |
|---|---|---|---|---|---|---|---|---|
| | 1934 | 1933 | 1934 | 1933 | 1934 | 1933 | 1934 | 1933 |
| Average number of miles operated | 238,938 | 240,425 | 59,192 | 59,433 | 45,366 | 45,599 | 134,380 | 135,393 |
| Revenues: | | | | | | | | |
| Freight | $238,792,426 | $239,613,221 | $95,293,024 | $97,788,252 | $44,926,125 | $45,438,556 | $98,573,277 | $96,386,413 |
| Passenger | 28,572,159 | 29,835,297 | 16,803,398 | 17,815,395 | 3,580,270 | 3,329,077 | 8,188,491 | 8,690,825 |
| Mail | 7,632,772 | 7,621,096 | 2,970,240 | 2,990,392 | 1,342,019 | 1,329,873 | 3,320,513 | 3,300,831 |
| Express | 4,777,748 | 4,436,141 | 2,011,202 | 2,266,875 | 837,695 | 673,761 | 1,928,851 | 1,495,505 |
| All other transportation | 6,567,008 | 6,396,413 | 3,204,977 | 3,402,052 | 642,174 | 602,701 | 2,719,857 | 2,391,660 |
| Incidental | 5,951,987 | 5,868,272 | 3,126,820 | 3,179,765 | 856,723 | 774,690 | 1,968,444 | 1,913,817 |
| Joint facility—Cr. | 808,256 | 808,550 | 250,295 | 274,379 | 170,617 | 140,310 | 387,344 | 393,861 |
| Joint facility—Dr. | 199,583 | 227,471 | 49,262 | 80,700 | 19,864 | 20,913 | 130,457 | 125,858 |
| Railway operating revenues | 292,902,773 | 294,351,519 | 123,610,694 | 127,636,410 | 52,335,759 | 52,268,055 | 116,956,320 | 114,447,054 |
| Expenses: | | | | | | | | |
| Maintenance of way and structures | 32,627,049 | 30,966,629 | 12,230,094 | 12,796,943 | 6,301,286 | 5,488,220 | 14,095,669 | 12,681,466 |
| Maintenance of equipment* | 53,105,847 | 55,342,545 | 22,666,707 | 25,469,004 | 10,448,098 | 10,581,211 | 19,991,042 | 19,292,330 |
| Traffic | 7,423,613 | 7,232,198 | 2,809,839 | 2,811,249 | 1,438,953 | 1,309,350 | 3,174,821 | 3,111,599 |
| Transportation | 101,398,074 | 97,047,599 | 44,959,214 | 44,637,760 | 16,748,819 | 15,765,823 | 39,690,041 | 36,644,016 |
| Miscellaneous operations | 2,350,769 | 2,159,499 | 1,083,376 | 1,098,243 | 260,527 | 219,410 | 1,006,866 | 841,846 |
| General | a 15,945,746 | b 12,210,601 | 6,641,929 | 5,328,670 | 2,535,074 | 2,061,465 | 6,768,743 | 4,820,466 |
| Transportation for investment—Cr. | 279,356 | 246,002 | 85,276 | 69,403 | 29,186 | 33,910 | 164,894 | 142,689 |
| Railway operating expenses | 212,571,742 | 204,713,069 | 90,305,883 | 92,072,466 | 37,703,571 | 35,391,569 | 84,562,288 | 77,249,034 |
| Net revenue from railway operations | 80,331,031 | 89,638,450 | 33,304,811 | 35,563,944 | 14,632,188 | 16,876,486 | 32,394,032 | 37,198,020 |
| Railway tax accruals | 20,646,435 | 21,260,570 | 9,460,747 | 9,360,825 | 3,745,564 | 3,946,864 | 7,440,124 | 7,952,881 |
| Uncollectible railway revenues | 85,349 | 112,103 | 34,902 | 51,037 | 11,596 | 14,879 | 38,851 | 46,187 |
| Railway operating income | 59,599,247 | 68,265,777 | 23,809,162 | 26,152,082 | 10,875,028 | 12,914,743 | 24,915,057 | 29,198,952 |
| Equipment rents—Dr. balance | 7,861,970 | 7,711,692 | 3,464,887 | 3,862,657 | 185,509 | 9,207 | 4,211,574 | 3,839,828 |
| Joint facility rent—Dr. balance | 3,112,293 | 3,188,039 | 1,739,170 | 1,714,759 | 394,461 | 351,808 | 978,662 | 1,121,472 |
| Net railway operating income | 48,624,984 | 57,366,046 | 18,605,105 | 20,574,666 | 10,295,058 | 12,553,728 | 19,724,821 | 24,237,652 |
| Ratio of expenses to revenues (per cent) | 72.57 | 69.55 | 73.06 | 72.14 | 72.04 | 67.71 | 72.30 | 67.50 |
| * Includes: | | | | | | | | |
| Depreciation | 15,364,308 | 15,397,617 | 6,853,017 | 6,326,207 | 2,976,566 | 3,046,320 | 5,534,725 | 6,025,090 |
| Retirements | 159,764 | 1,145,118 | *d* 95,765 | 836,734 | 344,348 | 138,667 | *d* 88,819 | 169,717 |

### FOR TEN MONTHS ENDED WITH OCTOBER, 1934 AND 1933

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Average number of miles operated | 239,209 | 241,002 | 59,182 | 59,547 | 45,443 | 45,770 | 134,584 | 135,685 |
| Revenues: | | | | | | | | |
| Freight | $2,225,483,890 | $2,091,303,068 | $946,380,414 | $891,989,802 | $436,716,604 | $423,047,053 | $842,386,872 | $776,266,213 |
| Passenger | 289,358,556 | 275,057,998 | 173,167,134 | 164,245,531 | 37,022,250 | 32,119,360 | 79,169,172 | 78,693,107 |
| Mail | 74,221,296 | 74,820,359 | 28,770,927 | 29,369,064 | 13,035,972 | 12,867,381 | 32,414,397 | 32,583,914 |
| Express | 44,762,600 | 37,288,946 | 18,816,897 | 16,470,214 | 8,787,265 | 7,064,816 | 17,158,438 | 13,753,916 |
| All other transportation | 63,032,037 | 60,476,654 | 32,443,033 | 33,495,560 | 5,931,306 | 5,379,636 | 24,657,698 | 21,601,458 |
| Incidental | 54,323,442 | 48,616,810 | 28,865,334 | 26,874,588 | 7,832,822 | 6,888,532 | 17,625,286 | 14,853,690 |
| Joint facility—Cr. | 7,690,091 | 6,905,032 | 2,397,044 | 2,250,941 | 1,767,485 | 1,510,053 | 3,525,562 | 3,144,038 |
| Joint facility—Dr. | 1,898,378 | 1,881,042 | 497,379 | 531,121 | 171,890 | 190,086 | 1,229,109 | 1,159,835 |
| Railway operating revenues | 2,756,973,534 | 2,592,587,825 | 1,230,343,404 | 1,164,164,579 | 510,921,814 | 488,686,745 | 1,015,708,316 | 939,736,501 |
| Expenses: | | | | | | | | |
| Maintenance of way and structures | 312,285,884 | 273,276,675 | 124,086,225 | 109,402,609 | 59,955,923 | 53,837,364 | 128,243,736 | 110,036,702 |
| Maintenance of equipment† | 538,928,009 | 495,545,280 | 241,241,753 | 223,231,626 | 101,862,756 | 93,962,658 | 195,823,500 | 178,350,996 |
| Traffic | 74,403,970 | 71,333,328 | 28,237,974 | 26,636,266 | 14,139,762 | 13,520,110 | 32,026,234 | 31,176,952 |
| Transportation | 970,167,834 | 893,479,359 | 452,521,260 | 415,148,716 | 161,555,539 | 150,042,452 | 356,091,035 | 328,288,191 |
| Miscellaneous operations | 22,453,813 | 19,446,023 | 10,861,676 | 9,785,094 | 2,609,252 | 2,212,010 | 8,982,885 | 7,448,919 |
| General | c 133,099,862 | e 119,801,881 | 57,409,080 | 51,686,851 | 22,138,114 | 20,430,771 | 53,552,668 | 47,684,259 |
| Transportation for investment—Cr. | 2,490,186 | 2,287,314 | 725,547 | 798,657 | 256,951 | 268,963 | 1,507,688 | 1,219,694 |
| Railway operating expenses | 2,048,849,186 | 1,870,595,232 | 913,632,421 | 835,092,505 | 362,004,395 | 333,736,402 | 773,212,370 | 701,766,325 |
| Net revenue from railway operations | 708,124,348 | 721,992,593 | 316,710,983 | 329,072,074 | 148,917,419 | 154,950,343 | 242,495,946 | 237,970,176 |
| Railway tax accruals | 209,389,781 | 220,894,173 | 88,364,556 | 91,886,214 | 41,043,367 | 42,002,602 | 79,981,858 | 87,005,357 |
| Uncollectible railway revenues | 936,615 | 894,317 | 483,918 | 369,708 | 149,994 | 112,373 | 302,703 | 412,236 |
| Railway operating income | 497,797,952 | 500,204,103 | 227,862,509 | 236,816,152 | 107,724,058 | 112,835,368 | 162,211,385 | 150,552,583 |
| Equipment rents—Dr. balance | 76,171,490 | 70,927,609 | 37,121,729 | 36,556,389 | 5,113,177 | 3,760,653 | 33,936,584 | 30,610,567 |
| Joint facility rent—Dr. balance | 30,391,637 | 30,452,653 | 16,826,604 | 16,510,979 | 3,711,013 | 3,356,070 | 9,854,020 | 10,585,604 |
| Net railway operating income | 391,234,825 | 398,823,841 | 173,914,176 | 183,748,784 | 98,899,868 | 105,718,645 | 118,420,781 | 109,356,412 |
| Ratio of expenses to revenues (per cent) | 74.32 | 72.15 | 74.26 | 71.73 | 70.85 | 68.29 | 76.13 | 74.68 |
| † Includes: | | | | | | | | |
| Depreciation | 154,464,957 | 151,018,413 | 68,302,053 | 60,092,563 | 29,034,813 | 30,086,400 | 57,128,091 | 60,839,450 |
| Retirements | 4,094,891 | 11,773,866 | 775,600 | 9,020,596 | 1,783,068 | 935,028 | 1,536,223 | 1,818,242 |

a Includes accruals on account of pensions, as follows: Under Federal Retirement Act, $3,516,714; under previously existing plan, $2,936,257, but excludes pension accruals held in suspense and not charged to operating expenses.
b Includes accruals on account of pensions, under previously existing plan, $2,851,345.
c Includes accruals on account of pensions, as follows: Under Federal Retirement Act, $10,344,126; under previously existing plan, $29,376,290, but excludes pension accruals held in suspense and not charged to operating expenses.
d Deficit or other reverse items.
e Includes accruals on account of pensions, under previously existing plan, $27,855,459.

*Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.*

*Table of Operating Statistics of Railways begins on next left-hand page*

## *Railroad Consolidation or Government Ownership?*

W. W. Atterbury, President of the Pennsylvania Railroad, in a recent discussion of this subject stated:

"Certainly broad and bold consolidation would offer an infinitely preferable way out, and I reiterate the opinion that sooner or later we shall have to come to it if we are to avoid government ownership. . . ."

# RAILROAD MERGERS

**By JOHN WILL CHAPMAN, B.S., M.C.S.**

***Member of Investment Staff, United States Trust Company of New York; Formerly Statistical and Security Analyst for Standard Statistics Company***

THIS timely new book deals with the causes, methods of effecting and results of railroad mergers. It is packed with facts of value to anyone concerned in any way with changes to be effected through the contemplated mergers of American railroads into large competing systems.

### WHAT REVIEWERS SAY

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# Freight Operating Statistics of Large Steam Railways—Selected Items for the Month of October

| Region, road, and year | Average miles of road operated | Train-miles | Locomotive-miles: Principal and helper | Locomotive-miles: Light | Car-miles: Loaded (thousands) | Car-miles: Per cent loaded | Ton-miles (thousands): Gross Excluding locomotives and tenders | Ton-miles (thousands): Net Revenue and non-revenue | Average number of locomotives on line: Serviceable | Unserviceable | Per cent unserviceable | Stored |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **New England Region:** | | | | | | | | | | | | |
| Boston & Albany....1934 | 402 | 125,444 | 129,730 | 8,367 | 3,016 | 66.7 | 160,092 | 53,338 | 59 | 41 | 40.7 | 17 |
| 1933 | 402 | 126,055 | 130,986 | 8,556 | 3,231 | 67.2 | 166,021 | 54,086 | 60 | 45 | 42.8 | 12 |
| Boston & Maine....1934 | 2,016 | 268,641 | 297,984 | 29,866 | 9,149 | 67.5 | 502,531 | 186,824 | 104 | 175 | 62.7 | 6 |
| 1933 | 2,059 | 276,773 | 312,226 | 28,616 | 9,390 | 67.2 | 508,375 | 187,723 | 128 | 159 | 55.5 | 12 |
| N. Y., New H. & Hartf....1934 | 2,049 | 336,617 | 408,273 | 19,817 | 10,615 | 66.9 | 570,153 | 214,347 | 221 | 134 | 37.6 | 43 |
| 1933 | 2,044 | 343,315 | 417,240 | 19,620 | 11,044 | 65.1 | 582,056 | 207,975 | 208 | 154 | 42.6 | 25 |
| **Great Lakes Region:** | | | | | | | | | | | | |
| Delaware & Hudson....1934 | 848 | 211,000 | 281,635 | 30,304 | 7,012 | 62.4 | 444,325 | 205,574 | 245 | 28 | 10.3 | 148 |
| 1933 | 848 | 208,962 | 279,758 | 32,365 | 6,934 | 59.6 | 439,029 | 193,951 | 249 | 27 | 9.6 | 144 |
| Del., Lack. & Western....1934 | 992 | 353,259 | 391,806 | 48,052 | 11,165 | 67.1 | 632,304 | 245,445 | 177 | 83 | 32.1 | 38 |
| 1933 | 998 | 350,761 | 383,329 | 48,558 | 11,145 | 65.2 | 634,545 | 238,403 | 198 | 61 | 23.6 | 57 |
| Erie (incl. Chi. & Erie)....1934 | 2,304 | 698,601 | 739,315 | 60,297 | 29,498 | 62.9 | 1,826,404 | 666,402 | 320 | 168 | 34.5 | 80 |
| 1933 | 2,316 | 708,322 | 735,960 | 59,155 | 27,740 | 60.5 | 1,754,810 | 642,335 | 308 | 193 | 38.5 | 75 |
| Grand Trunk Western....1934 | 1,007 | 190,557 | 192,009 | 1,999 | 4,842 | 60.0 | 298,026 | 103,141 | 64 | 73 | 53.1 | .. |
| 1933 | 1,008 | 200,364 | 201,576 | 1,793 | 4,717 | 59.4 | 289,352 | 98,100 | 74 | 75 | 50.4 | 4 |
| Lehigh Valley ....1934 | 1,335 | 387,266 | 406,306 | 36,779 | 11,057 | 63.4 | 699,842 | 288,373 | 189 | 121 | 39.0 | 33 |
| 1933 | 1,335 | 390,052 | 411,091 | 39,243 | 11,738 | 62.7 | 719,099 | 285,524 | 166 | 150 | 47.4 | 7 |
| Michigan Central ....1934 | 1,961 | 348,947 | 349,421 | 10,456 | 10,086 | 59.4 | 612,384 | 205,626 | 139 | 46 | 24.8 | 40 |
| 1933 | 1,957 | 356,477 | 357,577 | 10,121 | 11,027 | 59.5 | 656,506 | 217,150 | 138 | 50 | 26.6 | 31 |
| New York Central....1934 | 6,408 | 1,441,838 | 1,536,967 | 109,367 | 50,001 | 59.1 | 3,267,302 | 1,342,434 | 561 | 542 | 49.1 | 63 |
| 1933 | 6,426 | 1,489,973 | 1,594,033 | 106,666 | 53,193 | 58.8 | 3,385,894 | 1,350,267 | 573 | 612 | 51.7 | 25 |
| New York, Chi. & St. L....1934 | 1,661 | 456,912 | 460,318 | 5,066 | 14,302 | 61.2 | 848,330 | 296,029 | 135 | 47 | 25.9 | 35 |
| 1933 | 1,660 | 495,105 | 521,657 | 5,257 | 13,998 | 60.8 | 838,978 | 293,974 | 129 | 61 | 32.2 | 14 |
| Pere Marquette ....1934 | 2,189 | 316,268 | 323,497 | 2,586 | 7,345 | 59.1 | 480,919 | 184,021 | 114 | 42 | 27.2 | 17 |
| 1933 | 2,254 | 325,550 | 335,591 | 3,004 | 7,176 | 57.7 | 475,784 | 182,750 | 116 | 56 | 32.8 | 13 |
| Pitts. & Lake Erie....1934 | 234 | 65,377 | 67,139 | 21 | 2,586 | 55.4 | 223,715 | 121,484 | 42 | 31 | 42.5 | 15 |
| 1933 | 231 | 66,771 | 68,722 | 1,070 | 2,273 | 57.4 | 186,163 | 102,381 | 32 | 39 | 54.6 | 5 |
| Wabash ....1934 | 2,439 | 511,094 | 518,096 | 10,605 | 15,001 | 63.0 | 875,780 | 293,769 | 163 | 170 | 51.0 | 40 |
| 1933 | 2,444 | 505,738 | 512,999 | 10,237 | 15,097 | 62.8 | 875,923 | 292,639 | 161 | 165 | 50.6 | 39 |
| **Central Eastern Region:** | | | | | | | | | | | | |
| Baltimore & Ohio....1934 | 6,322 | 1,298,813 | 1,570,055 | 171,242 | 38,900 | 60.2 | 2,636,315 | 1,149,760 | 797 | 529 | 39.9 | 211 |
| 1933 | 6,282 | 1,395,083 | 1,683,255 | 183,990 | 40,189 | 58.5 | 2,785,475 | 1,209,808 | 690 | 631 | 47.8 | 79 |
| Big Four Lines....1934 | 2,655 | 554,353 | 570,636 | 21,639 | 15,889 | 60.4 | 1,016,728 | 440,031 | 188 | 184 | 49.5 | 8 |
| 1933 | 2,660 | 610,230 | 627,810 | 23,815 | 17,203 | 58.7 | 1,124,269 | 484,278 | 223 | 167 | 42.8 | 14 |
| Central of New Jersey....1934 | 690 | 140,090 | 156,612 | 26,486 | 4,736 | 58.3 | 330,824 | 154,814 | 76 | 89 | 54.2 | 21 |
| 1933 | 692 | 135,932 | 152,092 | 27,224 | 4,460 | 56.6 | 308,836 | 139,944 | 105 | 67 | 39.1 | 43 |
| Chicago & Eastern Ill....1934 | 939 | 165,308 | 165,954 | 2,560 | 3,663 | 62.4 | 237,789 | 100,522 | 46 | 59 | 56.1 | 7 |
| 1933 | 939 | 182,418 | 183,728 | 2,989 | 3,846 | 60.1 | 259,683 | 111,210 | 60 | 113 | 65.4 | 13 |
| Elgin, Joliet & Eastern....1934 | 446 | 74,793 | 75,600 | 708 | 1,650 | 58.2 | 129,196 | 61,763 | 63 | 25 | 28.5 | 15 |
| 1933 | 446 | 82,563 | 83,275 | 850 | 1,818 | 57.3 | 145,347 | 73,482 | 69 | 21 | 23.9 | 17 |
| Long Island ....1934 | 396 | 31,852 | 32,885 | 14,113 | 352 | 53.6 | 26,772 | 10,747 | 32 | 28 | 46.6 | 4 |
| 1933 | 396 | 33,154 | 34,144 | 14,437 | 335 | 54.6 | 24,772 | 9,918 | 31 | 22 | 41.7 | .. |
| Pennsylvania System ....1934 | 9,998 | 2,495,477 | 2,777,074 | 315,471 | 86,180 | 62.0 | 5,731,772 | 2,538,213 | 1,481 | 961 | 39.4 | 389 |
| 1933 | 10,082 | 2,661,847 | 2,935,314 | 304,364 | 90,551 | 62.2 | 5,947,248 | 2,605,365 | 1,507 | 911 | 37.7 | 342 |
| Reading ....1934 | 1,454 | 381,897 | 412,447 | 42,505 | 10,572 | 58.7 | 762,483 | 355,350 | 264 | 112 | 29.7 | 83 |
| 1933 | 1,454 | 401,621 | 436,690 | 46,403 | 10,920 | 57.6 | 804,381 | 369,333 | 254 | 114 | 30.9 | 81 |
| **Pocahontas Region:** | | | | | | | | | | | | |
| Chesapeake & Ohio....1934 | 3,104 | 844,915 | 887,789 | 36,214 | 35,907 | 53.5 | 3,107,933 | 1,653,120 | 429 | 112 | 20.7 | 106 |
| 1933 | 3,122 | 850,998 | 899,719 | 37,321 | 36,668 | 53.6 | 3,169,409 | 1,692,218 | 467 | 208 | 30.8 | 140 |
| Norfolk & Western....1934 | 2,162 | 589,175 | 613,672 | 29,950 | 23,002 | 57.5 | 1,904,761 | 967,582 | 383 | 39 | 9.3 | 142 |
| 1933 | 2,163 | 592,315 | 615,081 | 27,309 | 23,223 | 57.1 | 1,947,309 | 1,010,858 | 408 | 61 | 12.9 | 165 |
| **Southern Region:** | | | | | | | | | | | | |
| Atlantic Coast Line....1934 | 5,148 | 477,387 | 477,961 | 6,959 | 9,178 | 65.3 | 475,048 | 167,424 | 325 | 132 | 28.9 | 79 |
| 1933 | 5,144 | 475,874 | 477,431 | 5,726 | 9,170 | 63.9 | 484,930 | 170,816 | 363 | 128 | 26.1 | 135 |
| Central of Georgia....1934 | 1,886 | 212,399 | 213,317 | 3,405 | 4,727 | 68.8 | 255,838 | 97,595 | 96 | 45 | 32.0 | .. |
| 1933 | 1,886 | 202,462 | 203,430 | 3,150 | 4,439 | 69.8 | 229,935 | 84,500 | 103 | 40 | 27.8 | .. |
| Ill. Cent. (incl. Y. & M. V).1934 | 6,580 | 1,401,648 | 1,410,039 | 25,995 | 32,567 | 59.8 | 2,143,236 | 858,942 | 614 | 318 | 34.1 | 17 |
| 1933 | 6,643 | 1,362,214 | 1,377,895 | 23,312 | 31,147 | 58.4 | 2,088,094 | 831,871 | 593 | 343 | 36.7 | 11 |
| Louisville & Nashville....1934 | 5,049 | 949,580 | 1,020,371 | 24,416 | 20,732 | 58.4 | 1,445,246 | 676,910 | 320 | 301 | 48.5 | 17 |
| 1933 | 5,112 | 935,329 | 1,006,772 | 28,889 | 20,672 | 56.5 | 1,484,447 | 690,200 | 330 | 315 | 48.9 | 12 |
| Seaboard Air Line....1934 | 4,296 | 425,171 | 432,438 | 3,147 | 9,613 | 65.7 | 537,487 | 197,282 | 191 | 89 | 31.8 | 20 |
| 1933 | 4,301 | 414,421 | 421,640 | 3,249 | 9,453 | 64.6 | 537,560 | 197,958 | 220 | 66 | 23.1 | 30 |
| Southern ....1934 | 6,599 | 1,086,168 | 1,102,123 | 18,512 | 24,710 | 65.4 | 1,362,186 | 507,066 | 567 | 284 | 23.4 | 76 |
| 1933 | 6,602 | 1,071,176 | 1,088,874 | 17,613 | 24,586 | 65.1 | 1,358,011 | 503,263 | 693 | 220 | 24.1 | 187 |
| **Northwestern Region:** | | | | | | | | | | | | |
| Chi. & North Western....1934 | 8,443 | 1,076,027 | 1,132,476 | 27,321 | 26,798 | 59.6 | 1,678,707 | 549,400 | 578 | 244 | 29.7 | 157 |
| 1933 | 8,443 | 1,039,124 | 1,108,882 | 25,266 | 25,706 | 60.5 | 1,608,451 | 565,566 | 580 | 227 | 28.1 | 122 |
| Chicago Great Western....1934 | 1,463 | 255,783 | 256,735 | 13,837 | 7,391 | 58.5 | 465,307 | 159,456 | 62 | 38 | 37.9 | 3 |
| 1933 | 1,463 | 228,592 | 229,644 | 20,164 | 6,898 | 57.2 | 443,919 | 150,566 | 64 | 33 | 34.2 | 3 |
| Chi., Milw., St. P. & Pac..1934 | 11,168 | 1,355,336 | 1,421,767 | 58,114 | 34,503 | 60.2 | 2,163,805 | 837,093 | 531 | 343 | 39.2 | 125 |
| 1933 | 11,195 | 1,224,088 | 1,295,403 | 56,517 | 32,012 | 59.4 | 2,046,661 | 799,048 | 608 | 281 | 31.6 | 209 |
| Chi., St. P., Minneap. & Om.1934 | 1,644 | 225,823 | 234,775 | 10,637 | 4,609 | 62.6 | 284,891 | 112,177 | 120 | 35 | 22.8 | 47 |
| 1933 | 1,672 | 212,450 | 222,479 | 9,813 | 4,373 | 65.1 | 263,681 | 101,707 | 130 | 27 | 17.0 | 58 |
| Great Northern ....1934 | 8,302 | 907,509 | 917,386 | 30,942 | 30,754 | 60.0 | 1,958,704 | 760,511 | 445 | 158 | 26.2 | 55 |
| 1933 | 8,424 | 829,690 | 837,178 | 26,374 | 26,661 | 59.1 | 1,773,984 | 715,968 | 466 | 147 | 24.0 | 96 |
| Minneap., St. P. & S. St. M. ....1934 | 4,280 | 367,960 | 373,261 | 2,900 | 8,123 | 62.0 | 467,921 | 181,677 | 118 | 40 | 25.6 | .. |
| 1933 | 4,281 | 347,388 | 353,718 | 3,980 | 7,946 | 61.7 | 471,407 | 192,765 | 134 | 29 | 17.8 | 10 |
| Northern Pacific ....1934 | 6,414 | 666,408 | 723,919 | 48,567 | 20,465 | 65.3 | 1,189,290 | 477,584 | 351 | 109 | 23.7 | 14 |
| 1933 | 6,415 | 585,762 | 631,854 | 42,539 | 18,005 | 67.7 | 1,057,902 | 447,866 | 363 | 152 | 29.5 | 29 |
| Oreg.-Wash. R. R. & Nav..1934 | 2,143 | 184,573 | 192,789 | 10,938 | 4,522 | 66.9 | 265,763 | 105,756 | 86 | 34 | 28.0 | 12 |
| 1933 | 2,134 | 154,737 | 161,757 | 10,814 | 3,978 | 66.2 | 231,980 | 88,797 | 75 | 47 | 38.4 | 11 |
| **Central Western Region:** | | | | | | | | | | | | |
| Alton ....1934 | 921 | 204,265 | 212,874 | 1,476 | 4,293 | 60.0 | 273,895 | 93,472 | 58 | 36 | 38.0 | 6 |
| 1933 | 947 | 190,955 | 201,838 | 1,507 | 4,160 | 58.4 | 267,659 | 91,250 | 61 | 42 | 40.7 | 1 |
| Atch., Top. & S. Fe (incl. P. & S. F.)....1934 | 11,407 | 1,588,753 | 1,672,435 | 68,896 | 44,014 | 61.1 | 2,730,952 | 866,415 | 576 | 318 | 35.6 | 108 |
| 1933 | 11,586 | 1,506,858 | 1,634,985 | 81,325 | 43,910 | 60.9 | 2,753,811 | 866,455 | 618 | 298 | 32.5 | 173 |
| Chi., Burl. & Quincy....1934 | 8,975 | 1,366,375 | 1,429,413 | 46,823 | 34,638 | 59.0 | 2,097,424 | 837,282 | 463 | 108 | 18.9 | 2 |
| 1933 | 9,157 | 1,300,166 | 1,361,989 | 42,216 | 34,108 | 58.2 | 2,125,070 | 867,828 | 460 | 100 | 17.9 | 13 |
| Chi., Rock I. & Pac. (incl. Chi., Rock I. & Gulf)....1934 | 8,304 | 1,096,640 | 1,113,385 | 6,656 | 23,880 | 61.2 | 1,471,191 | 556,458 | 395 | 249 | 38.7 | 77 |
| 1933 | 8,333 | 1,060,346 | 1,082,263 | 6,436 | 23,049 | 59.1 | 1,439,215 | 528,863 | 462 | 152 | 24.8 | 96 |
| Denver & R. G. Wn....1934 | 2,636 | 377,649 | 421,041 | 49,078 | 9,828 | 61.1 | 574,398 | 208,904 | 181 | 41 | 18.4 | .. |
| 1933 | 2,471 | 313,836 | 347,684 | 37,995 | 8,945 | 60.8 | 543,124 | 197,567 | 212 | 33 | 13.5 | 20 |
| Los Angeles & Salt Lake...1934 | 1,224 | 187,793 | 212,438 | 29,390 | 5,034 | 58.5 | 306,020 | 109,066 | 72 | 21 | 22.1 | 3 |
| 1933 | 1,239 | 175,324 | 198,333 | 28,100 | 4,921 | 62.8 | 292,447 | 108,069 | 71 | 37 | 34.2 | 3 |
| Oregon Short Line....1934 | 2,472 | 358,295 | 373,399 | 23,645 | 9,346 | 60.3 | 592,020 | 223,064 | 135 | 49 | 26.7 | 8 |
| 1933 | 2,484 | 346,314 | 358,274 | 22,679 | 8,770 | 58.1 | 564,925 | 201,455 | 144 | 59 | 29.2 | 23 |
| Southern Pacific—Pacific Lines ....1934 | 8,607 | 1,157,102 | 1,253,212 | 135,637 | 38,017 | 62.6 | 2,351,326 | 787,644 | 552 | 281 | 33.8 | 144 |
| 1933 | 8,836 | 1,098,809 | 1,186,099 | 136,750 | 35,899 | 63.3 | 2,191,049 | 720,556 | 540 | 366 | 40.4 | 147 |
| Union Pacific ....1934 | 3,768 | 1,238,404 | 1,260,682 | 44,279 | 38,753 | 57.8 | 2,435,015 | 761,064 | 324 | 95 | 22.6 | 37 |
| 1933 | 3,768 | 1,120,357 | 1,145,899 | 48,174 | 38,915 | 60.2 | 2,386,862 | 758,115 | 350 | 102 | 22.6 | 87 |
| **Southwestern Region:** | | | | | | | | | | | | |
| Gulf, Colo. & S. Fe....1934 | 1,906 | 192,241 | 196,084 | 3,552 | 5,824 | 66.0 | 343,876 | 132,537 | 86 | 40 | 31.7 | 19 |
| 1933 | 1,916 | 182,210 | 188,096 | 4,277 | 5,392 | 65.1 | 336,499 | 141,316 | 86 | 37 | 30.1 | 18 |
| Mo.-Kans.-Texas Lines....1934 | 3,282 | 361,446 | 363,802 | 4,383 | 9,185 | 60.6 | 557,104 | 193,524 | 113 | 80 | 41.7 | 31 |
| 1933 | 3,282 | 388,635 | 390,826 | 4,969 | 10,264 | 60.7 | 613,435 | 221,621 | 161 | 72 | 31.0 | 70 |
| Missouri Pacific ....1934 | 7,332 | 1,185,347 | 1,218,240 | 28,648 | 31,283 | 58.8 | 2,009,796 | 742,830 | 402 | 150 | 27.2 | 107 |
| 1933 | 7,375 | 1,158,013 | 1,187,014 | 26,272 | 30,330 | 59.6 | 1,941,326 | 728,924 | 404 | 159 | 28.3 | 113 |
| St. Louis-San Francisco....1934 | 5,035 | 657,847 | 663,779 | 8,186 | 13,953 | 59.9 | 862,325 | 325,239 | 382 | 82 | 17.7 | 114 |
| 1933 | 5,173 | 645,894 | 651,916 | 7,176 | 14,494 | 60.3 | 897,355 | 347,800 | 395 | 88 | 18.2 | 136 |
| St. Louis Southwestern Lines ....1934 | 1,798 | 212,975 | 217,769 | 2,686 | 5,490 | 64.1 | 317,026 | 118,384 | 89 | 31 | 25.9 | 8 |
| 1933 | 1,872 | 202,671 | 209,077 | 2,690 | 4,683 | 65.3 | 269,288 | 101,168 | 96 | 38 | 28.4 | 16 |
| Texas & New Orleans....1934 | 4,436 | 510,954 | 511,009 | 6,708 | 11,789 | 61.2 | 712,051 | 255,746 | 241 | 59 | 19.7 | 63 |
| 1933 | 4,474 | 468,023 | 468,203 | 6,087 | 10,129 | 60.7 | 622,022 | 221,457 | 219 | 91 | 29.4 | 45 |
| Texas & Pacific....1934 | 1,945 | 253,645 | 253,798 | 1,753 | 7,778 | 64.9 | 453,180 | 165,678 | 148 | 83 | 35.8 | 73 |
| 1933 | 1,946 | 216,106 | 216,106 | 1,660 | 6,518 | 65.5 | 388,165 | 143,065 | 178 | 61 | 25.4 | 77 |

*Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.*

# 1934, Compared with October, 1933, for Roads with Annual Operating Revenues Above $25,000,000

| Region, road, and year | Average number of freight cars on line: Home | Foreign | Total | Per cent unserviceable | Gross ton-miles per train-hour, excluding locomotives and tenders | Gross ton-miles per train-mile, excluding locomotives and tenders | Net ton-miles per train-mile | Net ton-miles per loaded car-mile | Net ton-miles per car-day | Car-miles per car-day | Net ton-miles per mile of road per day | Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders | Locomotive-miles per locomotive-day |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **New England Region:** | | | | | | | | | | | | | |
| Boston & Albany....1934 | 3,037 | 3,623 | 6,660 | 25.2 | 21,326 | 1,276 | 425 | 17.7 | 258 | 21.9 | 4,283 | 157 | 44.7 |
| 1933 | 3,806 | 3,501 | 7,307 | 30.0 | 21,862 | 1,317 | 429 | 16.7 | 239 | 21.2 | 4,343 | 152 | 43.1 |
| Boston & Maine....1934 | 8,236 | 6,637 | 14,873 | 15.0 | 26,042 | 1,871 | 695 | 20.4 | 405 | 29.4 | 2,990 | 103 | 37.8 |
| 1933 | 8,788 | 7,652 | 16,440 | 15.8 | 25,908 | 1,837 | 678 | 20.0 | 368 | 27.4 | 2,941 | 103 | 38.4 |
| N. Y., New H. & Hartf....1934 | 16,109 | 10,456 | 26,565 | 13.2 | 24,606 | 1,694 | 637 | 20.2 | 260 | 19.3 | 3,374 | 109 | 38.9 |
| 1933 | 15,611 | 10,004 | 25,615 | 11.0 | 25,610 | 1,695 | 606 | 18.8 | 262 | 21.3 | 3,282 | 110 | 38.9 |
| **Great Lakes Region:** | | | | | | | | | | | | | |
| Delaware & Hudson....1934 | 10,882 | 2,605 | 13,487 | 4.2 | 27,184 | 2,106 | 974 | 29.3 | 492 | 26.9 | 7,818 | 111 | 36.8 |
| 1933 | 10,897 | 3,010 | 13,907 | 4.0 | 26,708 | 2,101 | 928 | 28.0 | 450 | 27.0 | 7,377 | 109 | 36.5 |
| Del., Lack. & Western....1934 | 16,547 | 4,519 | 21,066 | 12.9 | 27,666 | 1,790 | 695 | 22.0 | 376 | 25.5 | 7,983 | 149 | 54.6 |
| 1933 | 17,351 | 4,597 | 21,948 | 12.8 | 26,391 | 1,809 | 680 | 21.4 | 350 | 25.1 | 7,705 | 143 | 53.8 |
| Erie (incl. Chi. & Erie)....1934 | 28,194 | 12,890 | 41,084 | 6.7 | 43,061 | 2,614 | 954 | 22.6 | 523 | 36.8 | 9,330 | 97 | 52.9 |
| 1933 | 32,393 | 13,158 | 45,551 | 5.1 | 39,464 | 2,477 | 907 | 23.2 | 455 | 32.5 | 8,946 | 102 | 51.2 |
| Grand Trunk Western....1934 | 4,782 | 5,850 | 10,632 | 17.6 | 27,780 | 1,564 | 541 | 21.3 | 313 | 24.5 | 3,305 | 102 | 45.8 |
| 1933 | 5,957 | 7,830 | 13,787 | 21.3 | 26,167 | 1,444 | 490 | 20.8 | 230 | 18.6 | 3,138 | 106 | 44.2 |
| Lehigh Valley ....1934 | 17,815 | 4,850 | 22,665 | 17.5 | 30,920 | 1,807 | 745 | 26.1 | 410 | 24.8 | 6,969 | 143 | 46.2 |
| 1933 | 18,454 | 6,535 | 24,989 | 17.7 | 31,425 | 1,844 | 732 | 24.3 | 369 | 24.2 | 6,898 | 139 | 46.0 |
| Michigan Central ....1934 | 19,113 | 17,458 | 36,571 | 13.5 | 30,738 | 1,755 | 589 | 20.4 | 181 | 15.0 | 3,382 | 113 | 62.8 |
| 1933 | 22,848 | 18,571 | 41,419 | 11.5 | 32,959 | 1,842 | 609 | 19.7 | 169 | 14.4 | 3,579 | 117 | 63.2 |
| New York Central....1934 | 56,974 | 57,425 | 114,399 | 23.7 | 35,386 | 2,266 | 931 | 26.8 | 379 | 23.8 | 6,758 | 99 | 48.2 |
| 1933 | 66,496 | 61,038 | 127,534 | 22.4 | 35,177 | 2,272 | 906 | 25.4 | 342 | 22.9 | 6,778 | 102 | 46.3 |
| New York, Chi. & St. L....1934 | 9,048 | 6,347 | 15,395 | 4.9 | 32,816 | 1,857 | 648 | 20.7 | 620 | 49.0 | 5,750 | 98 | 82.3 |
| 1933 | 9,241 | 6,722 | 15,963 | 5.8 | 30,296 | 1,695 | 594 | 21.0 | 594 | 46.6 | 5,712 | 106 | 89.1 |
| Pere Marquette ....1934 | 12,124 | 4,726 | 16,850 | 3.4 | 24,769 | 1,521 | 582 | 25.1 | 352 | 23.8 | 2,712 | 94 | 67.4 |
| 1933 | 13,118 | 4,745 | 17,863 | 2.8 | 24,373 | 1,461 | 561 | 25.5 | 330 | 22.5 | 2,615 | 96 | 63.4 |
| Pitts. & Lake Erie....1934 | 16,459 | 9,076 | 25,535 | 50.1 | 46,714 | 3,422 | 1,858 | 47.0 | 153 | 5.9 | 16,770 | 95 | 29.9 |
| 1933 | 14,667 | 10,262 | 24,929 | 33.3 | 40,505 | 2,788 | 1,533 | 45.0 | 132 | 5.1 | 14,285 | 115 | 31.8 |
| Wabash ....1934 | 14,329 | 7,947 | 22,276 | 3.1 | 34,241 | 1,714 | 575 | 19.6 | 425 | 34.5 | 3,885 | 113 | 51.3 |
| 1933 | 15,138 | 8,312 | 23,450 | 5.0 | 34,035 | 1,732 | 579 | 19.4 | 403 | 33.1 | 3,862 | 111 | 51.8 |
| **Central Eastern Region:** | | | | | | | | | | | | | |
| Baltimore & Ohio....1934 | 82,160 | 21,845 | 104,005 | 19.6 | 26,011 | 2,030 | 885 | 29.6 | 357 | 20.1 | 5,867 | 144 | 42.4 |
| 1933 | 85,484 | 22,654 | 108,138 | 19.8 | 25,589 | 1,997 | 867 | 30.1 | 361 | 20.5 | 6,212 | 151 | 45.6 |
| Big Four Lines....1934 | 15,456 | 22,769 | 38,225 | 15.8 | 31,164 | 1,834 | 794 | 27.7 | 371 | 22.2 | 5,347 | 112 | 51.4 |
| 1933 | 18,827 | 22,132 | 40,959 | 15.9 | 31,983 | 1,842 | 794 | 28.2 | 381 | 23.1 | 5,872 | 115 | 53.9 |
| Central of New Jersey....1934 | 14,073 | 7,609 | 21,682 | 32.8 | 28,588 | 2,362 | 1,105 | 32.7 | 230 | 12.1 | 7,239 | 137 | 35.8 |
| 1933 | 16,733 | 6,859 | 23,592 | 31.3 | 27,001 | 2,272 | 1,030 | 31.4 | 191 | 10.8 | 6,524 | 139 | 33.6 |
| Chicago & Eastern Ill....1934 | 4,060 | 2,265 | 6,325 | 12.9 | 26,016 | 1,438 | 608 | 27.4 | 513 | 30.0 | 3,454 | 122 | 51.4 |
| 1933 | 5,874 | 2,545 | 8,419 | 22.5 | 24,893 | 1,424 | 610 | 28.9 | 426 | 24.5 | 3,821 | 126 | 35.0 |
| Elgin, Joliet & Eastern....1934 | 8,941 | 3,999 | 12,940 | 18.8 | 16,423 | 1,727 | 826 | 37.4 | 154 | 7.1 | 4,466 | 117 | 28.0 |
| 1933 | 9,439 | 3,697 | 13,136 | 19.4 | 15,264 | 1,760 | 890 | 40.4 | 180 | 7.8 | 5,315 | 117 | 30.2 |
| Long Island ....1934 | 764 | 3,597 | 4,361 | 2.2 | 6,514 | 841 | 337 | 30.5 | 79 | 4.9 | 875 | 287 | 25.0 |
| 1933 | 773 | 3,914 | 4,687 | 1.6 | 5,923 | 747 | 299 | 29.6 | 68 | 4.2 | 808 | 281 | 29.7 |
| Pennsylvania System ....1934 | 239,937 | 44,011 | 283,948 | 13.5 | 31,729 | 2,297 | 1,017 | 29.5 | 288 | 15.8 | 8,190 | 121 | 40.9 |
| 1933 | 258,013 | 47,401 | 305,414 | 11.4 | 31,644 | 2,234 | 979 | 28.8 | 275 | 15.4 | 8,336 | 124 | 43.2 |
| Reading ....1934 | 32,384 | 8,741 | 41,125 | 9.4 | 24,542 | 1,997 | 930 | 33.6 | 279 | 14.1 | 7,886 | 152 | 39.1 |
| 1933 | 34,956 | 8,821 | 43,777 | 21.2 | 24,772 | 2,003 | 920 | 33.8 | 272 | 14.0 | 8,197 | 151 | 42.4 |
| **Pocahontas Region:** | | | | | | | | | | | | | |
| Chesapeake & Ohio....1934 | 45,586 | 11,004 | 56,590 | 1.9 | 50,138 | 3,678 | 1,957 | 46.0 | 942 | 38.2 | 17,182 | 76 | 55.0 |
| 1933 | 44,144 | 10,837 | 54,981 | 2.2 | 51,164 | 3,724 | 1,989 | 46.1 | 993 | 40.1 | 17,484 | 75 | 44.8 |
| Norfolk & Western....1934 | 35,266 | 4,157 | 39,423 | 3.8 | 47,138 | 3,233 | 1,642 | 42.1 | 792 | 32.7 | 14,434 | 104 | 49.2 |
| 1933 | 35,801 | 4,582 | 40,383 | 3.7 | 48,033 | 3,288 | 1,707 | 43.5 | 807 | 32.5 | 15,077 | 104 | 44.3 |
| **Southern Region:** | | | | | | | | | | | | | |
| Atlantic Coast Line....1934 | 26,643 | 4,687 | 31,330 | 22.5 | 16,896 | 995 | 351 | 18.2 | 172 | 14.5 | 1,049 | 121 | 34.2 |
| 1933 | 26,891 | 4,590 | 31,481 | 25.9 | 17,368 | 1,019 | 359 | 18.6 | 175 | 14.7 | 1,071 | 120 | 31.8 |
| Central of Georgia....1934 | 6,972 | 2,051 | 9,023 | 29.1 | 20,931 | 1,205 | 459 | 20.6 | 349 | 24.6 | 1,670 | 127 | 49.6 |
| 1933 | 7,203 | 2,123 | 9,326 | 26.6 | 20,404 | 1,136 | 417 | 19.0 | 292 | 22.0 | 1,446 | 128 | 46.6 |
| Ill. Cent. (incl. Y. & M. V.)....1934 | 51,720 | 16,070 | 67,790 | 39.2 | 24,936 | 1,529 | 613 | 26.4 | 409 | 25.9 | 4,211 | 133 | 49.7 |
| 1933 | 52,903 | 14,619 | 67,522 | 31.1 | 24,284 | 1,533 | 611 | 26.7 | 397 | 25.5 | 4,039 | 135 | 48.3 |
| Louisville & Nashville....1934 | 47,454 | 7,168 | 54,622 | 36.0 | 23,368 | 1,522 | 713 | 32.7 | 400 | 21.0 | 4,324 | 136 | 54.3 |
| 1933 | 46,906 | 6,644 | 53,550 | 27.2 | 23,347 | 1,587 | 738 | 33.4 | 416 | 22.0 | 4,355 | 139 | 51.8 |
| Seaboard Air Line....1934 | 11,523 | 4,316 | 15,839 | 6.9 | 20,331 | 1,264 | 464 | 20.5 | 402 | 29.8 | 1,481 | 126 | 50.2 |
| 1933 | 13,307 | 4,262 | 17,569 | 9.7 | 20,837 | 1,297 | 478 | 20.9 | 363 | 26.9 | 1,485 | 125 | 47.9 |
| Southern ....1934 | 27,416 | 14,212 | 41,628 | 13.0 | 20,509 | 1,254 | 467 | 20.5 | 393 | 29.3 | 2,479 | 147 | 42.5 |
| 1933 | 31,757 | 18,057 | 49,814 | 21.5 | 20,608 | 1,268 | 470 | 20.5 | 326 | 24.5 | 2,459 | 149 | 39.1 |
| **Northwestern Region:** | | | | | | | | | | | | | |
| Chi. & North Western....1934 | 43,003 | 20,923 | 63,926 | 14.6 | 23,886 | 1,560 | 511 | 20.5 | 277 | 22.7 | 2,099 | 123 | 45.5 |
| 1933 | 44,626 | 18,396 | 63,022 | 10.1 | 23,405 | 1,548 | 544 | 22.0 | 289 | 21.8 | 2,161 | 124 | 45.4 |
| Chicago Great Western....1934 | 2,610 | 3,165 | 5,775 | 3.2 | 33,949 | 1,819 | 623 | 21.6 | 891 | 70.5 | 3,516 | 130 | 86.9 |
| 1933 | 3,100 | 3,041 | 6,141 | 5.7 | 34,402 | 1,942 | 659 | 21.8 | 791 | 63.3 | 3,319 | 134 | 82.6 |
| Chi., Milw., St. P. & Pac..1934 | 56,099 | 16,030 | 72,129 | 5.2 | 24,915 | 1,597 | 618 | 24.3 | 374 | 25.6 | 2,418 | 121 | 54.7 |
| 1933 | 58,227 | 14,883 | 73,110 | 4.5 | 25,737 | 1,672 | 653 | 25.0 | 353 | 23.8 | 2,302 | 121 | 49.1 |
| Chi., St. P., Minneap. & Om.1934 | 2,053 | 7,729 | 9,782 | 11.8 | 18,109 | 1,262 | 497 | 24.3 | 370 | 24.3 | 2,201 | 121 | 50.9 |
| 1933 | 1,889 | 6,394 | 8,283 | 11.1 | 18,057 | 1,241 | 479 | 23.3 | 396 | 26.2 | 1,963 | 122 | 47.9 |
| Great Northern ....1934 | 41,460 | 14,948 | 56,408 | 6.2 | 30,518 | 2,158 | 838 | 24.7 | 435 | 29.3 | 2,955 | 122 | 50.8 |
| 1933 | 42,843 | 12,754 | 55,597 | 5.3 | 31,436 | 2,138 | 863 | 26.9 | 415 | 26.2 | 2,742 | 117 | 45.4 |
| Minneap., St. P. & S. St. M. ....1934 | 15,353 | 3,618 | 18,971 | 5.0 | 19,472 | 1,272 | 494 | 22.4 | 310 | 22.3 | 1,369 | 104 | 76.8 |
| 1933 | 17,712 | 3,251 | 20,963 | 4.6 | 20,611 | 1,357 | 555 | 24.3 | 297 | 19.8 | 1,453 | 106 | 70.8 |
| Northern Pacific ....1934 | 34,626 | 6,149 | 40,775 | 11.3 | 26,334 | 1,785 | 717 | 23.3 | 378 | 24.8 | 2,402 | 153 | 54.1 |
| 1933 | 40,719 | 4,742 | 45,461 | 12.1 | 26,528 | 1,806 | 765 | 24.9 | 318 | 18.9 | 2,252 | 155 | 42.3 |
| Oreg.-Wash. R. R. & Nav..1934 | 7,177 | 2,242 | 9,419 | 5.9 | 23,048 | 1,440 | 573 | 23.4 | 362 | 23.1 | 1,592 | 150 | 54.8 |
| 1933 | 8,066 | 2,228 | 10,294 | 12.8 | 23,140 | 1,499 | 574 | 22.3 | 278 | 18.8 | 1,342 | 146 | 45.5 |
| **Central Western Region:** | | | | | | | | | | | | | |
| Alton ....1934 | 3,270 | 6,661 | 9,931 | 24.7 | 30,155 | 1,341 | 458 | 21.8 | 304 | 23.2 | 3,273 | 124 | 73.5 |
| 1933 | 3,096 | 6,063 | 9,159 | 19.0 | 27,806 | 1,402 | 478 | 21.9 | 321 | 25.1 | 3,108 | 129 | 63.7 |
| Atch., Top. & S. Fe (incl. P. & S. F.)....1934 | 65,441 | 9,235 | 74,676 | 14.6 | 31,958 | 1,719 | 545 | 19.7 | 374 | 31.1 | 2,450 | 106 | 62.9 |
| 1933 | 66,649 | 8,619 | 75,268 | 14.0 | 33,431 | 1,828 | 575 | 19.7 | 371 | 30.9 | 2,412 | 105 | 60.4 |
| Chi., Burl. & Quincy....1934 | 34,051 | 14,613 | 48,664 | 8.7 | 26,313 | 1,535 | 613 | 24.2 | 555 | 38.9 | 3,009 | 121 | 83.4 |
| 1933 | 39,467 | 13,634 | 53,101 | 9.5 | 26,855 | 1,634 | 667 | 25.4 | 527 | 35.6 | 3,057 | 121 | 80.9 |
| Chi., Rock I. & Pac. (incl. Chi., Rock I. & Gulf)....1934 | 30,458 | 11,484 | 41,942 | 21.6 | 23,147 | 1,342 | 507 | 23.3 | 428 | 30.0 | 2,162 | 136 | 56.1 |
| 1933 | 34,889 | 11,260 | 46,149 | 21.0 | 22,479 | 1,357 | 499 | 22.9 | 370 | 27.3 | 2,047 | 140 | 57.2 |
| Denver & R. G. Wn....1934 | 11,990 | 4,590 | 16,580 | 5.9 | 21,718 | 1,521 | 553 | 21.3 | 406 | 31.3 | 2,556 | 170 | 68.2 |
| 1933 | 12,531 | 4,147 | 16,678 | 4.9 | 24,490 | 1,731 | 630 | 22.1 | 382 | 28.5 | 2,579 | 163 | 50.8 |
| Los Angeles & Salt Lake...1934 | 4,553 | 1,014 | 5,567 | 10.1 | 29,136 | 1,630 | 581 | 21.7 | 632 | 49.9 | 2,875 | 146 | 84.0 |
| 1933 | 4,941 | 1,010 | 5,951 | 11.5 | 27,610 | 1,668 | 616 | 22.0 | 586 | 42.5 | 2,813 | 141 | 67.9 |
| Oregon Short Line....1934 | 8,963 | 5,184 | 14,147 | 20.0 | 26,061 | 1,652 | 623 | 23.9 | 509 | 35.3 | 2,911 | 120 | 69.8 |
| 1933 | 9,218 | 5,279 | 14,497 | 16.8 | 24,849 | 1,631 | 582 | 23.0 | 448 | 33.6 | 2,616 | 129 | 60.4 |
| Southern Pacific—Pacific Lines ....1934 | 34,521 | 23,588 | 58,109 | 9.3 | 31,819 | 2,032 | 681 | 20.7 | 437 | 33.7 | 2,952 | 107 | 53.8 |
| 1933 | 38,828 | 22,545 | 61,373 | 12.5 | 30,814 | 1,994 | 656 | 20.1 | 379 | 29.8 | 2,631 | 106 | 47.1 |
| Union Pacific ....1934 | 23,704 | 10,727 | 34,431 | 16.9 | 44,911 | 1,966 | 615 | 19.6 | 713 | 62.8 | 6,516 | 110 | 100.6 |
| 1933 | 24,369 | 9,143 | 33,512 | 18.4 | 46,359 | 2,130 | 677 | 19.5 | 730 | 62.3 | 6,491 | 106 | 85.3 |
| **Southwestern Region:** | | | | | | | | | | | | | |
| Gulf, Colo. & S. Fe....1934 | 9,682 | 1,579 | 11,261 | 9.6 | 27,473 | 1,789 | 689 | 22.8 | 380 | 25.3 | 2,243 | 110 | 51.2 |
| 1933 | 11,638 | 2,038 | 13,676 | 8.3 | 28,830 | 1,847 | 776 | 26.2 | 333 | 19.5 | 2,380 | 99 | 50.5 |
| Mo.-Kans.-Texas Lines....1934 | 5,761 | 3,251 | 9,012 | 3.3 | 27,492 | 1,541 | 535 | 21.1 | 693 | 54.2 | 1,902 | 87 | 61.5 |
| 1933 | 9,632 | 3,226 | 12,858 | 7.9 | 26,758 | 1,578 | 570 | 21.6 | 556 | 42.4 | 2,178 | 91 | 54.7 |
| Missouri Pacific ....1934 | 20,889 | 20,851 | 41,740 | 4.7 | 29,420 | 1,696 | 627 | 23.7 | 574 | 41.1 | 3,268 | 123 | 72.8 |
| 1933 | 22,028 | 18,532 | 40,560 | 7.7 | 29,015 | 1,676 | 629 | 24.0 | 580 | 40.5 | 3,188 | 126 | 69.5 |
| St. Louis-San Francisco....1934 | 21,926 | 4,756 | 26,682 | 7.5 | 22,820 | 1,311 | 494 | 23.3 | 393 | 28.2 | 2,084 | 134 | 46.7 |
| 1933 | 23,696 | 5,069 | 28,765 | 6.6 | 22,505 | 1,389 | 538 | 24.0 | 390 | 26.9 | 2,169 | 136 | 44.0 |
| St. Louis Southwestern Lines ....1934 | 3,535 | 2,479 | 6,014 | 7.6 | 24,857 | 1,489 | 556 | 21.6 | 635 | 46.0 | 2,124 | 96 | 59.0 |
| 1933 | 4,357 | 1,934 | 6,291 | 12.0 | 21,863 | 1,329 | 499 | 21.6 | 519 | 36.8 | 1,743 | 104 | 50.9 |
| Texas & New Orleans....1934 | 8,257 | 10,834 | 19,091 | 6.9 | 22,979 | 1,394 | 501 | 21.7 | 432 | 32.6 | 1,860 | 90 | 55.6 |
| 1933 | 8,797 | 10,556 | 19,353 | 5.8 | 22,008 | 1,329 | 473 | 21.9 | 369 | 27.8 | 1,597 | 91 | 49.3 |
| Texas & Pacific....1934 | 3,574 | 4,329 | 7,903 | 5.9 | 25,563 | 1,787 | 653 | 21.3 | 676 | 48.9 | 2,748 | 89 | 35.7 |
| 1933 | 3,687 | 4,525 | 8,212 | 5.3 | 24,557 | 1,796 | 662 | 22.0 | 562 | 39.1 | 2,372 | 86 | 29.4 |

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